EFFECTIVENESS OF BACK MASSAGE ON REDUCTION OF PAIN AND ANXIETY AMONG PATIENTS WITH STROKE AT SELECTED HOSPITALS MADURAI

A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER – 2018

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By

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MATHA COLLEGE OF NURSING

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A DISSERTATION SUBMITTED TO THE TAMILNADU DR.M.G.R. MEDICAL UNIVERSITY, CHENNAI, IN PARTIAL FULFILMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER – 2018

A dissertation submitted to

The Tamil Nadu Dr. M. G. R. University, Chennai.

In partial fulfillment of the requirement for the Degree of Master of Science in Nursing, October-2018

CERTIFICTE OF THE EXAMINERS

This is to certify that the dissertation entitled **"Effectiveness of Back Massage on Reduction of Pain and Anxiety among Patients with Stroke at Selected Hospitals, Madurai"** is a bonafide work done by **P.VINOTHKUMAR,** Matha College of Nursing, Manamadurai, submitted in partial fulfillment for the degree of Master of Science in Nursing.

SIGNATURE OF THE EXAMINERS:

1. External:_____ **2. Internal:_____**

Date: **Date:**

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"My presence shall go with thee" Exodus 33:14

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I am at a loss if I have neglected to thank anyone who in the course of this study has helped me. I am grateful to all those helping hands and not mentioning their name is purely unintentional. I offer a Bouquet of gratitude to all of them.

ABSTRACT

A study to assess the effectiveness of Back Massage on reduction of Pain and Anxiety among patients with stroke at selected Hospital, Madurai, was conducted in partial fulfillment of the requirement for the award a degree in Master of science in nursing under the Tamilnadu Dr.M.G.R.Medical university, Chennai. The research design was quasi experimental design. Sample size was 60, purposive sampling technique was used to select the samples.

Objectives of the study were

- To assess the pre and post test level of pain and anxiety among patients with stroke in experimental group.
- To assess the pre and post test level of pain and anxiety and among patients with stroke in control group.
- To evaluate the effectiveness of back massage on reducing pain and anxiety among patients with stroke in experimental group.
- To find out the relationship between post test level of pain and anxiety among patients with stroke in experimental group.
- To find out the association between post test level of pain with their selected demographic variables in experimental group.
- To find out the association between post test level of anxiety with their selected demographic variables in experimental group.

The conceptual framework adopted for this study was based on modified Ludwig von bertanlanffy's general system model (1968).

HYPOTHESES

H1: Mean post test level of pain and anxiety will be significantly lower than pre test level of pain and anxiety in experimental group.

H2: Mean post test level of pain and anxiety among experimental group will be significantly lower than control group.

H3: There will be a significant relationship between post test level of pain and anxiety among experimental group.

H4: There will be a significant association between post test level of pain and anxiety and their selected demographic variables in experimental group.

MAJOR FINDINGS OF THE STUDY

- With regard to age, 43.3% subjects were between 41-60 and above 60 years in the experimental group and 66.6% subjects were between 41-60 years of age in the control group.
- With regard to sex, in the experimental group 53.3% subjects were males and 50% subjects were males in the control group.
- Regarding the educational status 9 (30%) subjects had higher secondary education in the experimental group and 10 (33.3%) subjects had primary education in the control group.
- Regarding the occupation in the experimental group 17 (56.6%) subjects were sedentary workers and in the control group 20 (66.6%) were sedentary workers.
- Regarding the family income, majority of samples 13(43.3%) were getting an income between Rs 1001-5000 in the experimental

group and 13 (43.3%) samples were getting Rs 1001-5000 in the control group.

- Regarding the duration of illness 20(66.6%) subjects were less than 2 yrs of duration in the experimental group and 9(30%) were having 2-5 yrs of duration in the control group.
- Regarding the type of family in the experimental group 17(53.3%) subjects belong to nuclear family and in the control group20(66.6%) subjects belong to nuclear family.
- Regarding the family history of stroke 19(63.3%) had the history of stroke among experimental group and 22 (73.3%) had the history of stroke among control group.
- Regarding the hospitalization, in the experimental group 20(66.6%) subjects had the experience of previous hospitalization and in the control group 20(66.6%) subjects had the experience of previous hospitalization.
- The mean post-test level of pain(5.03) which is lower than (7.1) the pre test level of pain in the experimental group.
- The mean post-test level of anxiety(62.93) was lower than the mean pre-test level of anxiety (75.63) in the experimental group.
- There was a significant association between post-test level of pain and education among experimental group.
- There was a significant association between post test level of anxiety and income, occupation, education among experimental group.

RECOMMENDATIONS

- The study may be conducted by using large populations to generalize the findings.
- A longitudinal study may be conducted to assess the effectiveness of back massage on reducing pain and anxiety among stroke patients.
- This study may also be done as a comparative study in different settings.
- Nurse researcher has to identify the effects of back massage among patients with orthopaedic conditions.
- The effectiveness of back massage on reducing physiological parameters such as temperature, blood pressure, heart rate could be studied.

CONCLUSION

As for this research is concerned, the interventional study proved that there is a significant reduction on pain and anxiety level among patients with stroke. The findings of the present study agree with the findings of the previous clinical study, regarding back massage. The pre-test and post-test mean and standard deviation were calculated. The paired ‘t’ test was applied to identify the effectiveness. The reduction of pain and anxiety level was statistically significant at 0.05 level. Therefore the back massage is a very effective non-pharmacological intervention to reduce the pain and anxiety among stroke patients.

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CHAPTER-I

INTRODUCTION

"Wisdom is nothing more than healed pain."

- Robert Gary Lee

Health is a state of being hale, sound in body, mind or soul, especially the state of being free from physical diseases or pain. Illness is the impaired of normal physiological function affecting a part or whole of a human being. **(Anderson.B, 2010)**

Illness may be acute or chronic. Acute illness is a disease or a disorder which is abrupt in onset and of a short duration. A chronic illness is any disorder that persists over a long period and affects physical, emotional, intellectual, social, vocational or spiritual functioning which mostly needs hospitalization for example cancer, hypertension, orthopedic surgeries and stroke.

Stroke is a global health problem. It is the second commonest cause of death and fourth leading cause of disability worldwide (Strong 2007). Approximately each year 20 million people will suffer from stroke and of these 5 million will not survive (**Dalal, 2007**). In developed countries, stroke is the first leading cause of disability, second leading cause of dementia and third leading cause of death. Stroke is also a predisposing factor for epilepsy, falls and depression in developed countries (Fisher, 2011) and is a leading cause of functional impairments, with 20% of survivors requiring institutional care after 3 months and 15% to 30% being permanently disabled **(Steinwachs, 2000**). Stroke is no longer a disease of the developed world: Low and middle-income countries account for 85.5% of disability-adjusted life years (**Mathers, 2006).**

Stroke is a life-changing event that affects not only the person who may be disabled, but their family and caregivers. Utility analyses revealed that a stroke is viewed by more than half of those at risk as being worse than death (**AHA, 2016).** In many high-income countries, stroke management has changed substantially in the past two decades. Impressive developments through structured clinical pathways for thrombolysis and secondary prevention have been made. **(Warlow, 2008).**

Pain can be defined as an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage (**The international association for pain**)

Functional shoulder motion is fundamental for effective hand use and during activities of daily living. It is the healthcare professionals' ethical responsibility to actively address early prevention and management of post stroke shoulder pain. Shoulder pathology with resulting pain is common in people who develop hemiplegia after stroke or brain injury **(Barberan et al., 2010)**.

According to Van Ouwenaller and colleagues, shoulder pathology occurs in up to 85% of patients with spasticity and up to18% of patients with flaccid symptoms. Clinical trials documented that the shoulder pain significantly influences motor recovery and upper-extremity function after stroke **(Lindgren et al., 2013)**.

Motor relearning or learning to use the more affected extremity for specific functional tasks can be extremely challenging for people with poststroke hemiplegia (**Gillen & Burkhardt, 2009**).

Fuilan (2010) reported on the prevalence of shoulder pain after the episode of stroke in post stroke unit. There were 400 clients involved in a study. Among 400, 282 clients experiencing shoulder pain after stroke, 58 clients had shoulder subluxation and 60 clients had depression.

Anxiety can be defined as a psychological and physiological state characterized by cognitive, somatic, emotional and behavioral components combined to create an unpleasant feeling that is typically associated with uneasiness fear or worry. Physiological and behavioral indicators of anxiety include heart rate, blood pressure, muscle tension, restlessness and also subjective report of anxiousness.(**Anderedrsi, 2000)**

Piotrowski. et.al., (2010) states that pain limits physical functioning including the ability to cough and deep breathe, move, sleep and perform self care activities, and despite the wide spread of opioids. Pharmacological interventions alone may not effectively address all the sensory and affective factors involving in experiencing pain.

A person's ability to master his or her environment, participate in social roles, and engage in daily occupations can be influenced significantly by the sensorimotor, cognitive, and perceptual deficits that frequently results from stroke. Effective stroke rehabilitation is essential to positively influence the quality of life in stroke survivors who sustain functional limitations after stroke .Loss of upper-extremity control is common after stroke, with 88% of stroke survivors having some level of upper-extremity dysfunction due to shoulder subluxation and spasticity. (**Pendleton,Schultz, & Krohn, 2010).**

When pain becomes constant in a person's daily routine, feeling of anxiety may occur. Anxiety is commonly associated with chronic pain (**Tunks, Crook, & Weir, 2008**), and post stroke shoulder pain. The association of chronic pain and anxiety can result in less activity and greater disability **(Keogh, McCracken, 2009)**

Massaging is the art of rubbing as defined by Hippocrates roots back to thousands of years. It has a long history in all cultures around the world. Today people use different types of massage therapy for variety of health problems and health related purposes. Many researchers have scientifically proved that even a single session of back massage can reduce (a reaction to particular situation) blood pressure and heart rate. Multiple sessions can reduce trait anxiety, depression and pain.

Tappan (2010) states that it is obvious that massage stimulates the sensory proprioceptive nerve fibres of the skin and underlying tissue producing various effects in any zone supplied from the same segment of the spinal cord, such reactions are called ‘reflex effects’.

The gate control theory suggests that massage may provide stimulation that helps to block pain signals sent to the brain. It also suggesting that massage would stimulate the release of certain chemicals in the body such as serotonin, endorphins and also cause beneficial mechanical changes in pain. (**Perry.P (2014)**

Physiological parameters like body temperature, blood pressure, pulse, motor function, sensory function are impaired due to an acute storke and also they face psychological problems such as emotional liability, frustration, lack of co operation and fear.

Anxiety will increase the metabolic rate, blood pressure, lactate level in blood and make the heart rate become irregular. Massage helps to reduce the metabolic rate, blood pressure and lactate level and to regulate the heart rate. In anxiety state the body will not secreting mood altering neuro transmitter (serotonin) but the massage therapy will be triggering the secretion of serotonin. It helps relaxation and enjoy happiness.

Nurses have an important role to provide a physiological and psychological care **(EAVES, 2009).**

Pharmacological interventions give physiological relaxation and some extent it will give psychological relaxation also, but non pharmacological intervention is mainly deals with the mind and body. In non pharmacological therapy touch is a language spoken through the hands and understood by the heart. The intention and the tone to provide the basis for emotional healing hospitalization and disease process can place a heavy demand on an individual's physiological and psychological status. Thus the back massage is one of the complimentary therapy which will helps to reduce the pain and anxiety.

NEED FOR THE STUDY

"The greatest will is physical pain"

-Saint Augustine, Theologian

"When we touch the human we touch the heaven"

-Novalis

In India, the overall age adjusted prevalence rate for stroke is estimated to lie between 84- 262/100,000 in rural and between 334-424/100,000 in urban areas. Overall in India, the adjusted annual incidence (per 100,000 persons) of stroke is 124 in rural area (Bhattacharya 2013) and 145 in urban area (**Dass, 2017)**

The incidence rates increase from 27-34/100,000 in between 35-44 age groups to822-1116/100,000 in the 75+ age group (Dalal et al 2008, Sridharan et al 2009). In India, the prevalence of stroke in younger individuals is high (18-32% of all stroke cases) compared with high-

income countries (Dalal et al., 2008). Stroke prevalence among the elderly in rural India was 1.1% and urban India was 1.9%. Prevalence is directly proportional to age and inversely proportional to the education levels of stroke survivors (**Feri, 2011).**

In India, nearly one-fifth of patients admitted to hospitals are aged <40 years (**Pandian, 2012**). Higher proportions of younger individuals are affected in India compared to developed countries. Ischaemic stroke is the most common subtype followed by haemorrhagic and embolic stroke 21-48% of stroke in young is caused by atherosclerotic large artery occlusive disease (Kumar, 2015). Interim analysis of 3092 patients in a study (INSPIRE) conducted in India found that approximately 27% (814) of the patients with stroke were below the age of 50 and 30% (935) of patients had a poorer socio economic status. Thus, suggesting the higher incidence of stroke among younger age group and also among poorer population in India (Xavier, 2012).

Men are more likely to have a stroke than women: the male/female sex ratio for India is 7:1 (Sethi, 2008). This may be due to differences in risk factors such as smoking and drinking which are more prevalent among men in India compared with women (Das, 2008). The mean onset of stroke for men in India ranges from 63-65 for men and 57-68 for women (Bhattacharya et al., 2014).

Morbidity and Mortality associated with Stroke

Global scenario

- 400-800 strokes per 100,000 (Banerjee, 2009)
- 5.7 million deaths (Sridharan, 2011)
- 16 million new acute strokes every year (Strong, 2013)
- 28,500,000 (disability adjusted life-year) (WHO, 2015)
- 28-30 day case fatality ranges from 17%-35% (Feigin et al., 2009)

Indian scenario

- Prevalence 90-222 per 100,000 (Dalal, 2010)
- 102, 620 million deaths (Nongkynrih ,2016)
- 1.44-1.64 million cases of new acute strokes every year (WHO, 2005 and Murthy, 2014)
- 6,398,000 DALYs (WHO, 2015)
- 12% of strokes occur in the population aged <40 years (Mathur, 2009)
- 28-30 day case fatality ranges from 18-41% (Das, 2017)

Shoulder pain is a common complication after a cerebrovascular accident. From 16% to 72% of stroke patients develop hemiplegic shoulder pain. It may occur in up to 80% of stroke patients who have little or no voluntary movement of the affected upper limb. Hemiplegic shoulder pain has been shown to affect stroke outcome in a negative way. It interferes with recovery after a stroke: it can cause considerable distress and reduced activity and can markedly hinder rehabilitation. **(Roy et.al., 2010)** demonstrated that the presence of hemiplegic shoulder pain is strongly associated with prolonged hospital stay and poor recovery of arm function in the first 12 weeks after stroke.

Loss of upper-extremity control is common after stroke, with 88% of stroke survivors having some level of upper-extremity dysfunction (**Pendleton, Schultz, & Krohn, 2015**). Multiple factors can affect a patient's ability to integrate the affected upper extremity into functional tasks. These factors may include pain, contracture and deformity, loss of selective motor control, weakness, superimposed orthopedic limitations, loss of postural control to support upper-extremity control, loss of biomechanical alignment of joints, and inefficient or ineffective movement patterns **(Pendleton et al., 2016).**

Functional shoulder motion is fundamental for effective hand use during activities of daily living; consequently, it is healthcare professionals' ethical responsibility to actively address early prevention and management of poststroke shoulder pain. Shoulder pathology with resulting pain is common in people who develop hemiplegia after stroke or brain injury **(Bhogal, 2015).**

The physiological advantages of massage therapy are:

- Strengthens the immune system
- Stimulates the release of endorphins, the body's natural painkiller
- Promotes deeper and easier breathing
- Improves circulation, increasing the flow of oxygen and nutrients to cells and tissues
- Speeds movement of lymph fluids, facilitating the removal of metabolic wastes, which accumulate due to lack of exercise or inactivity.
- Relieves muscle tension and stiffness and decreases muscle spasms
- Relieves from headache
- Provides greater joint flexibility and range of motion
- Facilitates healing of strained muscles and sprained ligaments, reduces pain and swelling and the formation of excessive scar tissue
- Enhances the health and nourishment of the skin
- Improves posture ,and athletic performance

The emotional advantages of massage therapy are:

- Relieves stress and anxiety, Aids in relaxation

- Relieves the effects of depression
- Improves sleep
- Satisfies the need for caring, safe and nurturing touch
- Creates a feeling of well-being
- Increases awareness of the mind-body connection

Massage is thought to improve physiological and clinical outcomes by offering symptomatic relief of pain through physiological ,mental relaxation compared with other complimentary therapies. Massage has higher results than laser therapy, exercise, acupuncture and self care reduction**. Criag.W.(2013)**

Kisher Taslitz. et al., (2015) concluded that effleurage stroking of the back presumably produced autonomic effects in the connective tissue resulting in psychological relaxation.

Martin Maxwell (2014) conducted a study on the effect of back massage on shoulder pain in patients with stroke. 100 subjects participated. 50 were in control group, 50 were in experimental group. The result showed that the shoulder pain was reduced after back massage which was measured by visual analogue pain scale.

Pain increases the feeling of anxiety tends to increase the perception of pain. This connection occurs in the brain because painful stimuli activate portions of limbic system believed to control emotional reactions. People who are injured and hospitalized often experience both pain and heightened levels of anxiety due to their helplessness and lack of control. (**Persis M.H (2011)**

Jonathan Jeffry (2013) conducted a study on therapeutic effects of back massage on anxiety among stroke victims. Back massage was given for 5 days. Anxiety was measured by anxiety rating scale .The post test mean value of anxiety were significantly lower than the pre test.

In Madurai around 17.09% young men are affected in each year. Out of 60 patients 45 patients had shoulder pain. (**Dr.M.Natarajan 2012).** In Neethiarasu Neuro care centre at Madurai about 600-700 patients are treated per year, 4-5 patients are admitted with stroke every day.

Only pharmacological method is being used as a management. So it is necessitated investigator urged to assess the effectiveness of back massage among stroke patients. The study findings can be used to educate the caregivers for providing physiological and psychological relaxation to their clients.

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of back massage on reduction of pain and anxiety among patients with stroke at selected hospitals Madurai.

OBJECTIVES

- To assess the pre and post test level of pain and anxiety among patients with stroke in experimental group.
- To assess the pre and post test level of pain and anxiety and among patients with stroke in control group.
- To evaluate the effectiveness of back massage on reducing pain and anxiety among patients with stroke in experimental group.

- To find out the relationship between post test level of pain and anxiety among patients with stroke in experimental group.
- To find out the association between post test level of pain with their selected demographic variables in experimental group.
- To find out the association between post test level of anxiety with their selected demographic variables in experimental group.

HYPOTHESES

H1: Mean post test level of pain and anxiety will be significantly lower than pre test level of pain and anxiety in experimental group.

H2: Mean post test level of pain and anxiety among experimental group will be significantly lower than control group.

H3: There will be a significant relationship between post test level of pain and anxiety among experimental group.

H4: There will be a significant association between post test level of pain and anxiety and their selected demographic variables in experimental group.

OPERATIONAL DEFINITIONS

Effectiveness: It refers to the reduction (or) the desired effect on the level of pain and anxiety after back massage as measured by VAS numerical pain scale and Modified Anxiety rating scale

Back Massage-In this study back massage refers to rubbing the back of the patient from nape of the neck to the sacrum by using effleurage, petrissage technique. The entire massage lasts 15-20 minutes, given continuously for five days.

Effleurage: long slow gliding strokes to promote relaxation, stroking is done from distal to proximal, along the long axis of the muscle in one direction. The operator places a hand on each side of the athlete's spine. Both hands stroke towards the spine in unison.

Petrissage: It is a kneading stroke in which the skin is lifted up, pressed down , squeezed , pinched and rolled. The action is initiated by bracing with the heels of the hands, then either holding the thumbs steady and moving the fingers in circular motion.

Pain: It refers to a subjective feeling of a stroke client, which was measured by VAS numerical scale, the score ranges from 0-10.

Anxiety: It refers to a state of tension which affects both mind and body, which was measured by modified anxiety rating scale, the score ranges from 60-100.

Patients with Stroke: It refers to the patient diagnosed as stroke and admitted in post stroke unit at V. Neethiarasu Neuro hospital & Devadoss Multi speciality hospital, Madurai.

ASSUMPTION

- Hospitalization and disease process are the major stressors for the patients.
- The back massage relaxes the mind and body and thereby reducing pain and anxiety.
- Selected demographic variables will influence the perception of pain and anxiety among the patients with stroke.

PROJECTED OUTCOME

- The findings of the study would help the investigator to know about the effect of back massage on reducing pain and anxiety among patients with stroke.
- The findings of the study will help to practice back massage to relieve pain among patients with other neurological disorders.

CONCEPTUAL FRAMEWORK

The conceptual framework is a group of related ideas, statements or concepts. The term conceptual model is often used interchangeably with conceptual frame work and sometimes with grand theories those that articulate a broad range of the significant relationship among the concept of a discipline .

-Kozier Barbara (2015)

The conceptual framework for the study was derived from general system theory given by Ludwig von Bertanlanffy's (1968). According to this theory, a system is a set of components or units interacting with each other within a boundary that filters the type and rate of exchange with environment from which the system receives input and gives back output in the form of matter, energy and information.

Bertanlanffy explained that the system has three major aspects.

1. Input
2. Throughput
3. Output

Input

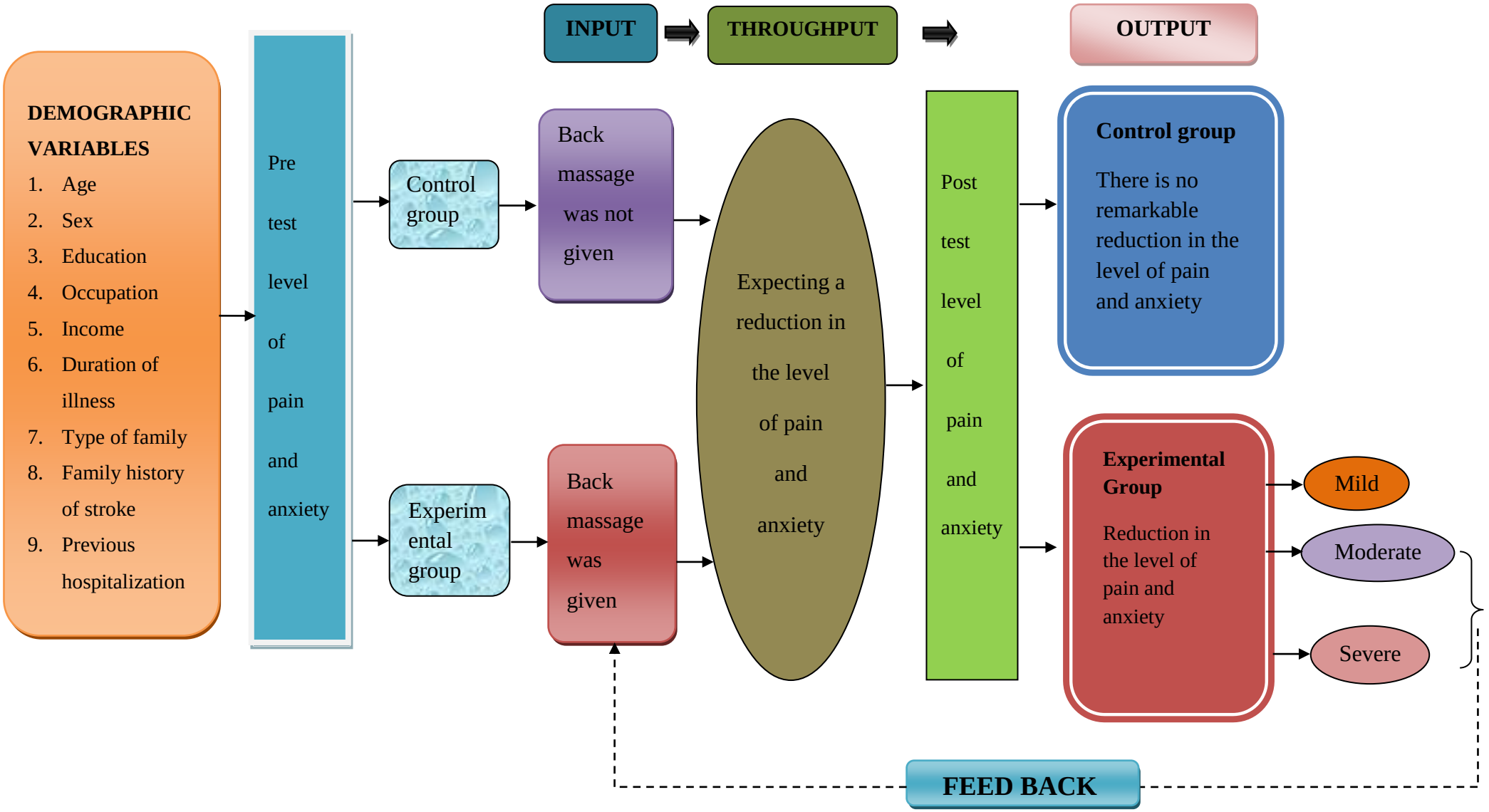
Input is any form of energy, information material or human that enters in to the system through its boundaries. In this study, input refers to the intervention i.e back massage which was given by the researcher to the experimental group.

Throughput

It is the process that occurs between the input and output in such a way that can be readily used by the system. Throughput refers to a desired effect expected by the researcher after the back massage therapy.

Output

Output, is any information that leaves the system and enters the environment through the system boundaries. Output refers to the outcome of the study.



CONCEPTUAL FRAMEWORK BASED ON LUDWIG VON BERTANLANFFY'S GENERAL SYSTEM MODEL (1968)

CHAPTER- II

REVIEW OF LITERATURE

Review of literature is a systematic search of published work to gain information about a research topic (Polit & Hungler)

Conducting a review of literature is a challenging experience. Through the literature review, researcher generates a picture of what is known about a particular framework, to proceed with the study. A literature provides a background for current knowledge on the topic and illuminates the significance of the new study. Review of literature orients oneself with what is not known and known about an inquiry to ascertain what research can best make content to the existing base of evidence.

A**na Emilia. Para et al., (2011)** A study was conducted on benefits of massage therapy on elderly stroke patients. The aim of the study was to reduce the shoulder pain and blood pressure by giving massage therapy. The subjects were 52 elderly stroke survivors who were experiencing shoulder pain but were not taking any pain medication. The participants were assigned randomly to a massage group and a control group. Participants in the massage group were given 10 minutes of slow stroke back massage at bed time for 7 consecutive nights. The study results revealed that the participants in the massage group had significant reduction in the levels of shoulder pain as well as lowered heart rate and blood pressure than the control group.

Alberet et al., (2010) A study was conducted to investigate the effect of a non pharmacologic intervention,' slow stroke back massage (SSBM)' on systolic and diastolic blood pressure, shoulder pain, heart rate, and skin temperature. These effects were evaluated as indicator of relaxation in 30 stroke patients. The study results revealed that after SSBM, the client's heart rates systolic and diastolic blood pressure decreased, shoulder pain reduced and skin temperature increased.

Dyrlov et al., (2012) conducted a study to assess the effectiveness of back massage on hemiplegic patients with shoulder pain. These analyses found that shoulder pain relieved independently after slow stroke back massage. The study suggested that slow stroke back massage is an effective intervention for hemiplegic patients with shoulder pain.

Esther Mok And Chin Pang Woo (2014) conducted a study on the effects of slow stroke back massage on anxiety and shoulder pain in elderly stroke patients in Hong Kong . Participants were stroke patients with 65 years old, experiencing shoulder pain and not already receiving pain relief measures. One hundred and two subjects participated. Results of the study showed that subjects in the massage group had significantly lower level of pain, anxiety, blood pressure and heart rate compared to subjects in the control group. Three days after these improvements were maintained among the subjects in the massage group.

Frew Law La (2016) A study was conducted to investigate the effect of non pharmacologic intervention,' slow stroke back massage' on shoulder pain. The effects were evaluated in 60 stroke patients. Massage is a slow rhythmic stroking technique with the hands. The hands move over a 2-inch-wide area on either side of spinous processes and from the crown of the head to the sacral area. The entire massage lasts for 15

minutes. The study results revealed that after massage therapy, the client's shoulder pain reduced. Slow stroke back massage has been used effectively to promote relaxation in the stroke patients.

Gamble G.E., Barberan.e. (2016) A prospective study was conducted on stroke and shoulder pain .It revealed that the incidence of post stroke shoulder pain is high in the first 6 months after stroke. A history of shoulder pain (Barthel score), anxiety and depression score were recorded. Pain outcome and stroke outcome was recorded at subsequent visits. 52 (40%) subjects developed shoulder pain on the same side of their stroke. There was a strong association between pain and abnormal shoulder joint examination, ipsilateral sensory abnormalities and arm weakness. Shoulder pain had resolved or improved at 6 months in 41 (80%) subjects. Shoulder pain after stroke occurred in 40% of 123 participants. 80% of subjects had a good recovery with massage therapy.

Harris M, Richards Kc (2013) conducted a study on the physiological and psychological effect on slow stroke back massage on older adult. The study result statically proved (p>0.05% level) and showed significant improvement on physiological and psychological relaxation in older people.

J Bodyw Mov Ther (2014) conducted a study on therapeutic effects of traditional back massage (Thai massage) on pain, muscle tension and anxiety in patients with scapulocostal syndrome. Traditional Thai massage given for 9 sessions over a period of 3 weeks. Pain intensity, muscle tension and anxiety were measured before and after massage. The post test mean values of pain and anxiety were significantly reduced than the pre test mean values.

Jennifer Parks (2015) conducted a study on the effects of massage therapy in reducing depression and anxiety among stroke victims. The results revealed that there was a reduction in the level of anxiety and depression which was measured by state trait anxiety scale and geriatric depression scale.

Mok.E.Woocp (2009) conducted a study to evaluate the effects of slow-stroke back massage on back pain among elderly stroke patients 102 stroke patients participated in the study. Massage group received 10 minutes of slow stroke for 3 days. After the back massage the pain level was measured by visual analogue numerical pain scale. The findings of the study showed that, massage therapy group experiences significant reduction in the level of back pain and psychologically relaxed compared to the control group.

Mortazavi et.al., (2015) A study was conducted on the effect of slow-stroke back massages on anxiety and shoulder pain in hospitalized elderly patients with stroke. An experimental quantitative design was used to compare the scores for self-reported pain, anxiety, blood pressure, heart rate among the patients before and immediately after, and three days after the intervention. SSBM was given for seven consecutive evenings. 100 patients participated in the study were randomly assigned to a massage group or control group. The study suggested that SSBM was an effective nursing intervention for reducing shoulder pain, anxiety, blood pressure and improvement of heart rate in elderly patients with stroke. From a nursing perspective, SSBM provided a challenge and an opportunity for nurses and family caregivers to apply alternative therapies for the holistic patient care.

Roosink M, etal.,(2013) conducted a study on the effect of anxiety in the prognosis of post stroke period. The results showed that there was a strong bond between anxiety and the prognosis. The increased level of anxiety reduced the prognosis rate.

Smith.M. (2011) Shoulder pain is a common problem following stroke. Patients may present with varying degrees of paralysis (hemiplegia), which commonly affect the arms. As a consequence, the stability of the shoulder may be compromised with subsequent risk of damage to soft tissue structures. Patients with more severe paralysis of the arm are likely to develop shoulder pain. The underlying causes of shoulder pain, and the sources of this pain suggest that damage to soft tissues can occur during post-stroke care in hospital. An evidence-based, multidisciplinary approach was needed to prevent damage to the shoulder and enable the management of any complications.

Suethanpornkul S (2013) did a study on the effect of back massage on post stroke shoulder subluxation and shoulder pain. 60 subjects were selected, 30 subjects were in experimental group, 30 were in control group 3 days back assage was given. The results revealed that there was a measurable reduction in the level of pain with complimentary therapy of massage.

Wilkie.D.J (2015) conducted a study to evaluate the effect of back massage on pain intensity, anxiety in chronic bed ridden patients. Interventions consists of back massages for 2 weeks. Baseline and outcome measurements were obtained before the first and after 4^{th} massages. Results of the study showed that the pain intensity, respiratory rate and anxiety were significantly reduced immediately after the massages. The study revealed that the pain intensity and anxiety which was decreased by 42% in experimental group compared to 25% reduction in control group.

Zeferino Si, Aycock Dm(2014) conducted a study on the effects of massage therapy on post stroke shoulder pain. The results showed that the massage therapy reduced the post stroke shoulder pain and improve the upper extremity function.

Cherkin.D.C.et al.,(2015) conducted a comparative study on the epidemiology of stroke in India and developed countries. Results revealed that the prevalence of stroke is apparently less in India but this may be due to lower life expectancy and occur among a younger population as compared to those in developed countries, stroke accounts for 0.9-4.5 % of total medical admissions to neurological wards.

June Martin (2013) A study was conducted on' prevalence of stroke in India', at Vellore South India showed an annual incident rate of 13/100,000 population.In this study, the prevalence rate was, 56.9/100,000 population [68.5 in males & 44.8 in females.

Maria Hernandez etal.,(2011) A study was conducted to identify the prevalence of stroke and the proportion with persisting sequelae. This study comprised of 74 977 subjects, including permanent nursing home residents. The study concluded that, one in three of the younger patients and three in four of the older patients have persisting impairments and disabilities from the combined effect of stroke .

Christopher. I.M. Price (2016) was conducted a study on prevalence of shoulder pain after stroke. 200 patients were involved in a study. Among 200 patients 80% of the patients were experienced shoulder pain after the stroke. He suggested an evidence based approach to the management of shoulder pain after a stroke.

Ingrid Lingren (2012) A prospective population study was conducted on shoulder pain among patients with stroke. During a 1-year period, 416 first-ever stroke patients were included in the population-based Lund Stroke Register. After 4 months, 327 patients were followed up and 1 year later, the surviving 305 patients were followed up again. Shoulder pain onset within 4 months after stroke was reported by 71 patients (22%). Among that 61 patients were able to score the visual analog scale, 79% had moderate–severe pain. One year later, 8 of these 71 patients had died, 17 had no remaining pain, and 28 additional patients had developed shoulder pain since the first follow up.

Lynne Turner, Diana Jackson (2014) et.al., conducted a study on the incidence of post stroke shoulder pain among patients with stroke. The study concluded that among 100 subjects, 75 subjects were developed shoulder pain after the episode of stroke.

Report by **Alternative and complementary medicine (2013)** suggested that, massage therapy may be an useful approach for pain relief in a number of chronic, non malignant pain conditions, particularly musculoskeletal pain (eg. Shoulder pain, low back pain). Massage is typically administered as a adjuvant therapy which helps to prepare the patient for exercise or other interventions. Thus massage is not usually considered a first line treatment, but rather as a complement to other conventional first line approaches (eg .physical therapy and medications).

Akama Y Monitor(2012) did a study on Effects of massage therapy on tissues Massage on healthy tissues, supports adequate tissue perfusion, encourage lymphatic drainage, there by reducing edeme, providing gentle stretching of tissue, and relieves subcutaneous scar

tissue. Massage has some advantageous effects on the skin. It increases the blood folw, stimulates skin suppleness and relaxes the tissue.

Cessar (2010) explained effleurage or stroking is the fundamental massage stroke. It had the following specific effects such as increased circulation of blood and lymph, through the release of endorphine. It reduces the feeling of pain, promotes systemic relaxation via stimulation of sensory receptors. It also influence the para sympathetic branch of autonomous nervous system and produces histamines which widened blood vessels and decreases blood pressure.

Donoyama N, Ohkoshi. (2012) conducted a study on the effects of traditional Japanese massage therapy on various symptoms in patients with Parkinson's disease. The results showed that the massage therapy is effective for alleviating shoulder stiffness, muscle pain, lassitude of a body part and fatigue which may contribute to enhance the health related quality of life.

M.Walton (2010) conducted a study on immediate effects of effleurage back massage on physiological and psychological relaxation. The study results showed that there was significant improvement in heart rate, respiration, blood pressure and also physiological relaxation such as pain and anxiety among patients with orthopedic dysfunctions.

Suzuki M, Tatsumi (2011) conducted a study on the physical and psychological effects of 6 weeks tactile massage on elderly patients with dementia. The result suggested that tactile massage reduces aggressiveness and stress level in patients with dementia.

CHAPTER III

RESEARCH METHODOLOGY

This chapter includes research approach, research design, setting, population, sampling size, sampling technique, criteria for sample selection, description of tools, testing the tools, pilot study, data collection, and protection of subject rights.

RESEARCH APPROACH

Quantitative approach was used in this study.

RESEARCH DESIGN

Quasi experimental design - pre test post test control group design was used in this study.

Pretest	Intervention	Post test
O1	X	O2
O3	-	O4

O1 - pre test assessment of experimental group

O2 - post test assessment of experimental group

O3 - pre test assessment of control group

O4 - post test assessment of control group.

X - Back massage

STUDY SETTING

The study was conducted at Dr.Devadoss Multi Speciality Hospital, Alagarkovil main road, K.Pudhur, Surveyor colony, Madurai which is situated 1km from Mattuthavani bus stand. It is a 200 bedded

hospital. Dr. V.Neethiarasu Neuro Hospital , K.K. Nagar Madurai which is situated 8km from Mattuthavani bus stand. It is a 60 bedded hospital. It includes Neuro Intensive care unit(medical), general and post stroke unit . Daily 100-150 out patients are attending in OPD and 4to5 patients are admitted daily. 90% patients admitted with the diagnosis of stroke. Medical treatment only given here, for surgical management patient will be referred to other hospital. Once the patient become stabilized (vitally stabled) the client will be shifted from ICU to post stroke unit which contain 10 beds.

POPULATION

Population refers to the entire aggregation of samples that meet the designated criteria. It also refers to the entire set of individuals who have some common characteristics and it is important to make a distinction between the target and accessible population (Polit & Hungler, 1999)

Target Population

The target population of the present study comprises of all the patients having stroke.

Accessible Population

The accessible population comprises of all the patients having stroke and admitted at V.Neethiarasu Neuro hospital & Devadoss Multi Speciality Hospital, Madurai.

SAMPLING

SAMPLE SIZE

Sample size of this study consist of 60 stroke patients (30 in experimental group and 30 in control group) admitted in V.Neethiarasu Neuro hospital & Devadoss Multi speciality hospital, Madurai.

SAMPLING TECHNIQUE

Purposive sampling technique was used to select the sample.

CRITERIA FOR SAMPLE SELECTION

INCLUSION CRITERIA

- Who are willing to participate in this study
- Stroke patients who are admitted in post stroke unit in V. Neethiarasu Neuro hospital & Devadoss Multi speciality hospital, Madurai.
- Both male and female patients
- Subjects , who could read and understanding Tamil

EXCLUSION CRITERIA

- Stroke patients with altered level of consciousness
- The client who need surgical management.

DESCRIPTION OF TOOLS

Tools were prepared after reviewing the related literature such as books, journals, past experience and also from experts opinion.

PART I

Deals with demographic variables of stroke patients such as age, sex, education, occupation and monthly income, duration of illness, type of family, previous hospitalization, and family history of stroke.

PART II

VAS (visual analogue scale) numerical pain scale was used to assess the level of pain among client with stroke. Maximum score is 10 (severe level of pain) and minimum score is 0 (no pain).

PARTIII

Modified anxiety rating scale was used to assess the level of anxiety. The interpretation of score is as follows:

Below 60 - Mild level of anxiety

61-84 - Moderate level of anxiety

85-100 - Severe level of anxiety

TESTING THE TOOLS VALIDITY

VALIDITY

Validity refers to the degree to which an instrument measures what is supposed to measure. To ensure content validity of the tools which includes demographic data, numerical pain scale and modified anxiety rating scale were submitted to one Medical expert, five Nursing experts, one physiotherapist and also one biostatistician. Their suggestions were taken in to consideration and the modification was incorporated in the final preparation

RELIABILITY

The reliability of the tool was obtained by establishing test-retest method.

The “r” value was 0.8. The score indicates a high correlation and hence the tool was considered as highly reliable.

PILOT STUDY

Before conducting the pilot study formal consent was obtained from the managing director of V. Neethiarasu Neuro Hospital, Madurai.

In order to test the feasibility, relevance and practicability of the study, a pilot study was conducted among six subjects with stroke (three subjects in experimental group, three subjects in control group). Initially the subjects were interviewed in order to collect the demographic data and researcher explained the procedure. The pre test level of pain and anxiety was assessed by numerical pain scale and anxiety rating scale. Back massage was given for five days with the duration of 15-20 minutes. Same procedure was followed to the control group without intervention. Post test was done after 5 days. Data were analyzed and it revealed that the study was feasible. The subjects included in the pilot study were excluded in the main study.

DATA COLLECTION

Before starting the study, the researcher obtained formal permission from the dissertation committee of Matha College of Nursing, Manamadurai and from the V.Neethiarasu hospital & Devadoss hospital authority to conduct the study. The period of data collection extended for six weeks. Data collection was done from Monday to Saturday. The researcher introduced herself to the selected subjects and the verbal consent was obtained from each subject after giving the assurance of confidentiality. Each week, the data were collected from 5 subjects in experimental group and control group. Pre test assessment of pain and

anxiety was done by VAS numerical pain scale and modified anxiety rating scale. Back massage was given to the experimental group clients by using effleurage/petrissage technique with the duration of 15-20 minutes. Post test assessment of pain and anxiety was done after 5 days in both experimental/control group by using the same scales.

PLAN FOR DATA ANALYSIS

The data analysis were done by using descriptive and inferential statistics.

DESCRIPTIVE STATISTICS

Frequency, percentage and mean were used.

INFERNTIAL STATISTICS

Paired ‘t’ test was used to determine the difference between pre test and post test level of pain and anxiety among experimental group. Chi-square was used to determine the association between post test level of pain and anxiety with their selected demographic variables.

PROTECTION OF HUMAN SUBJECTS

The research proposal was approved by dissertation committee prior to pilot study and main study. Permission was obtained from head of the department of Medical Surgical Nursing, Matha college of Nursing, Manamadurai and from the hospital authority. Oral permission was obtained from the study subjects and data collection was kept as confidential. Assurance was given to the study subject that anonymity of each individual would be maintained.

CHAPTER – IV

ANALYSIS AND INTERPRETATION OF DATA

This chapter deals with the analysis of the samples and the interpretation of data to determine the "The effectiveness of back massage on reduction of pain and anxiety among patients with stroke at selected hospitals Madurai. According to Polit (2007), analysis helps a researcher to make a sense of quantitative information. Statistical procedure enables researcher to summarize, organize, evaluate, interpret and communicate numeric information.

The obtained data has been classified, grouped, and analyzed statistically, based on the objectives of the study.

OBJECTIVES

- To assess the pre and post test level of pain and anxiety among patients with stroke in experimental group.
- To assess the pre and post test level of pain and anxiety and among patients with stroke in control group.
- To evaluate the effectiveness of back massage on reducing pain and anxiety among patients with stroke in experimental group.
- To find out the relationship between post test level of pain and anxiety among patients with stroke in experimental group.
- To find out the association between post test level of pain with their selected demographic variables in experimental group.
- To find out the association between post test level of anxiety with their selected demographic variables in experimental group.

ORGANIZATION OF DATA

The findings of the study were grouped and analyzed under the following sections.

Section-A Distribution of samples based on their selected demographic variables among experimental and control groups.

Section-B Distribution of samples based on their pre test-and post-test level of pain among experimental and control groups**.**

Distribution of samples based on their pre test-and post-test level of anxiety among experimental and control groups.

Section-C Evaluating the effectiveness of back massage in reduction of pain among experimental group.

Evaluating the effectiveness of back massage in reduction of anxiety among experimental group**.**

Section-D Relationship between post test level of pain and anxiety among experimental group.

Section E: Association between post test level of pain with their selected demographic variables among experimental group.

Association between post test level of anxiety with their selected demographic variables among experimental group.

Table-1:

Distribution of samples based on their selected demographic variables among experimental and control groups.

S. No	Demographic Variables		Experimental group (n=30)		Control group (n=30)	
			f	%	f	%
1.	Age (years)	a) Below 40yrs	4	13.3	5	16.6
		b) 41-60 yrs	13	43.3	20	66.6
		c) Above 61 yrs	13	43.3	5	16.6
2.	Sex	a) Male	16	53.3	15	50
		b)Female	14	46.6	15	50
3.	Education	a)uneducated	5	16.6	1	3.3
		b)Primary Education	5	16.6	10	33.3
		c)Secondary Education	9	30	9	30
		d)Under Graduate	8	26.6	7	23.3
		e)Post Graduate	3	10	3	10
4.	Occupation	a)moderate	6	20	4	13.3
		b)sedentary	17	56.6	20	66.6
		c)heavy	7	23.3	6	20
5.	Income	a)below Rs.1000	6	20	8	26.6
		b)Rs.1001-5000	13	43.3	13	43.3
		c)Above Rs.5001	11	36.6	9	30

S. No	Demographic Variables		Experimental group (n=30)		Control group (n=30)	
			f	%	f	%
6.	Duration of illness	a) Below 2 yrs	20	66.6	17	56.6
		b) 2-5 yrs	9	30	9	30
		c) Above 5 yrs	1	3.3	4	13.3
7.	Type of family	a) nuclear	17	56.6	20	66.6
		b) Joint	13	43.3	10	33.3
8.	Family history of stroke	a) yes	19	63.3	22	73.3
		b) No	11	36.6	8	26.6
9.	Previous hospitalization	a) Yes	20	66.6	20	66.6
		b) No	10	33.3	10	33.3

Table 1 shows the distribution of samples according to their selected demographic variables such as age, sex, education, occupation, income, duration of illness, type of family, family history of stroke, and previous hospitalization in experimental group and control group.

Regarding age in the experimental group, 4 (13.3%) samples were in the age group of below 40 years, 13 (43.3%) samples were between 40-60 years, and 13 (43.3%) samples were above 60 years. In the control group 5 (16.6%) samples were below the age of 40, 20 (66.6%) samples were between 40-60 years, 5(16.6%) samples were above 60 years.

Regarding sex in the experimental group, 16 (53.3%) samples were males and 14(46.6%) samples were females. In the control group 15 (50%) samples were males and 15 (50%) were females.

Regarding educational status in the experimental group, 5 (16.6%) samples were uneducated and 5 (16.6%) samples had primary education, 9 (30%) samples had higher secondary education, 8 (26.6%) samples were under graduate and 3 (10%) subjects were postgraduates. In the control group 1 (3.3%) sample was uneducated, 10 (33.3%) samples had primary education, 9 (30%) subjects had higher secondary education, 7(23.3%) subjects were degree holders and 3 (10%) subjects were postgraduates.

Regarding occupation in the experimental group, 6 (20%) subjects were moderate workers, 17(56.6%) subjects were sedentary workers, 67(23.3%) subjects were heavy workers. In the control group, 4 (13.3%) subjects were moderate workers, 20(66.6%) were sedentary workers and 6 (20%) subjects were under the category of heavy workers.

Regarding family income in the experimental group, 6 (20%) samples were getting below Rs.1000, 13(43.3%) samples were getting Rs.1001-5000, and 11 (36.6%) samples were getting above Rs.5001. In the control group, 8 (26.6%) samples were getting below Rs.1000,13 (43.3%) samples were getting Rs.1001-5000, 9 (30%) samples were getting above Rs.5001.

Regarding duration of illness in the experimental group, 20 (66.6%) has less than 2 years of duration, 9 (30%) were having 2 to5 years and 1(3.3%) was having above 5 yrs of duration. In the control group, 17(56.6%) were having less than 2 yrs of duration, 9 (30%) were having 2-5 yrs and 4(13.3%) were having above 5 yrs of duration.

Regarding the type of family in the experimental group 17(56.6%) subjects belong to nuclear family and 13(43.3%) subjects belong to joint family. In the control group 20(66.6%) subjects belong to nuclear family, 10(33.3%) subjects belong to joint family.

Regarding the family history of stroke 19(63.3%) had the history of stroke and 11(36.6%) subjects had no history of stroke among experimental group.In the control group 22(73.3%) had the history of stroke and 8(26.6%) subjects had no history of stroke.

Regarding the previous hospitalization in the experimental group 20(66.6%) subjects were previously hospitalized, 10(33.3%) subjects were not previously hospitalized. In the control group 20(66.6%) subjects were previously hospitalized, 10(33.3%) subjects were not previously hospitalized.

Figure .2 Distribution of samples according to Age (in years)

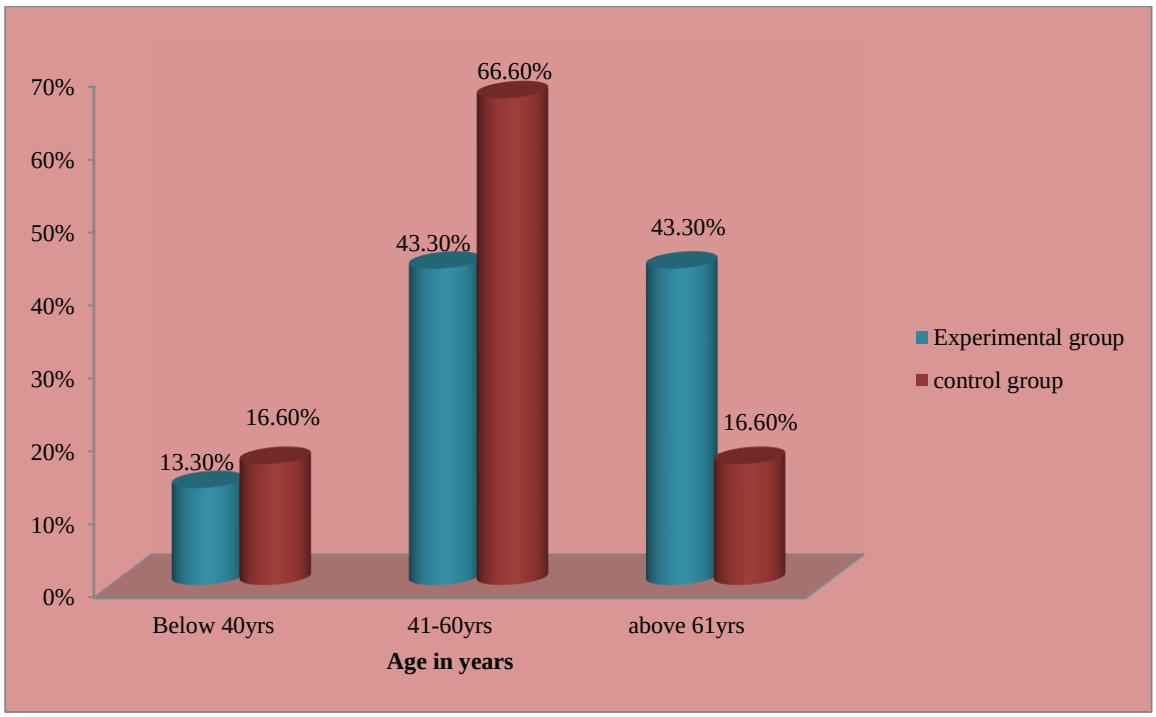


Figure.3 Distribution of samples according to sex

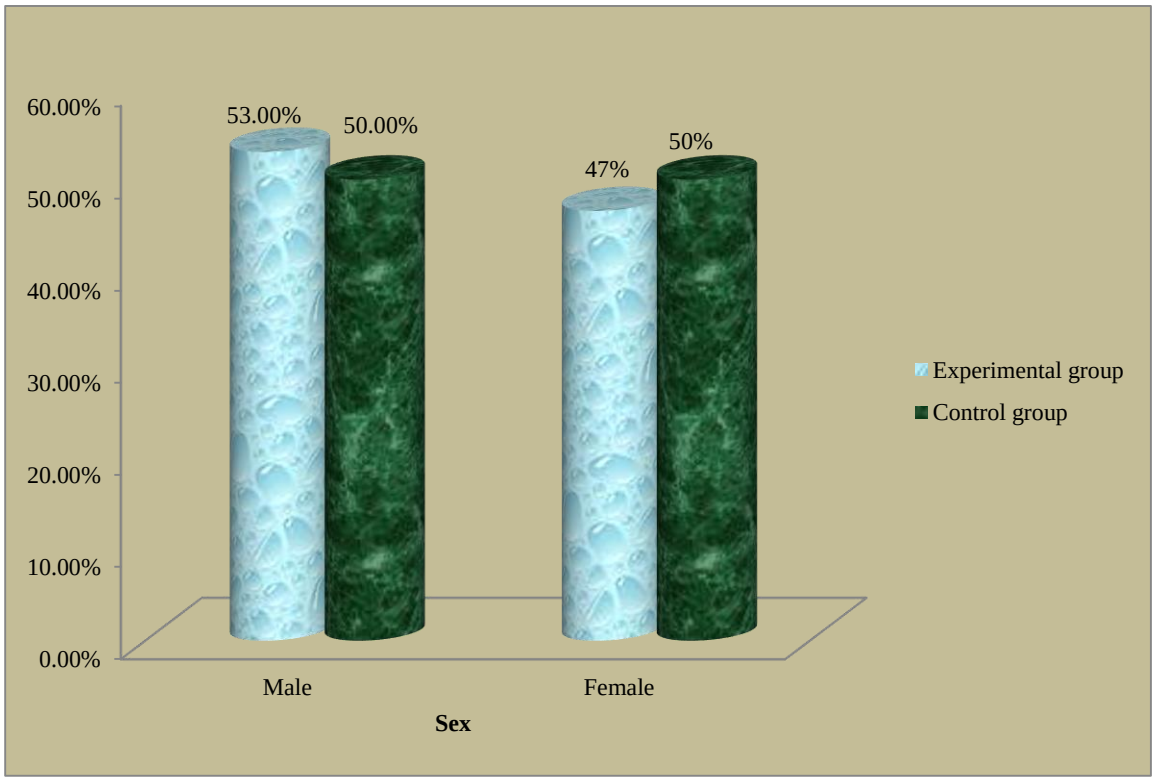


Figure.4 Distribution of samples according to Education

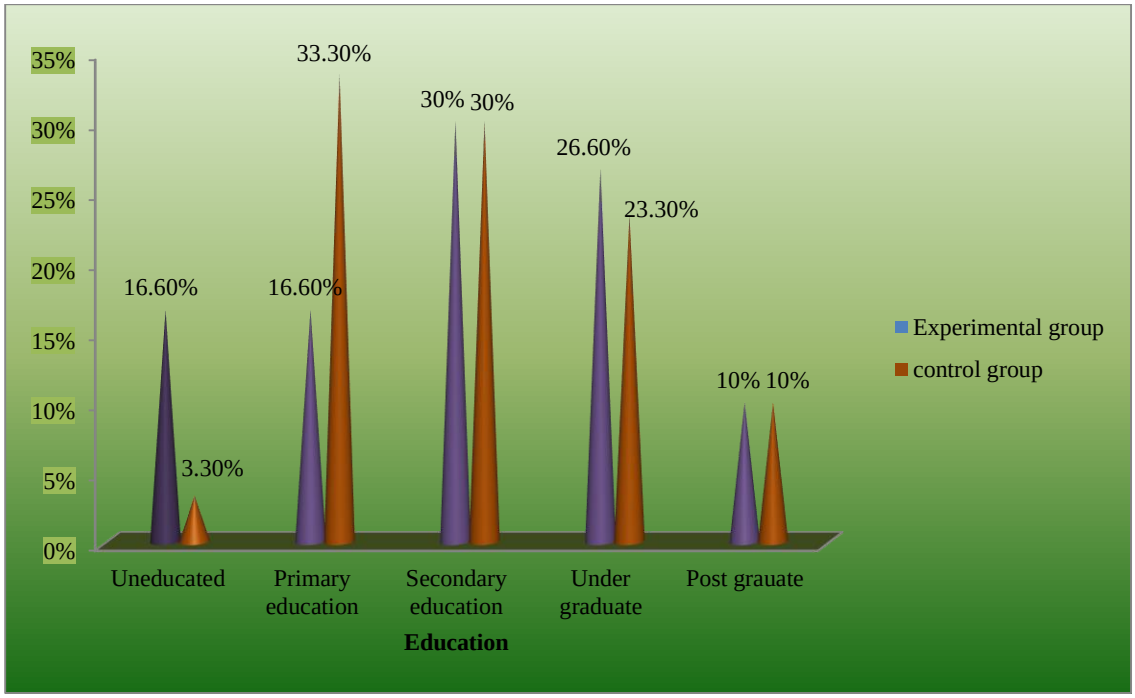


Figure.5 Distribution of samples according to Occupation

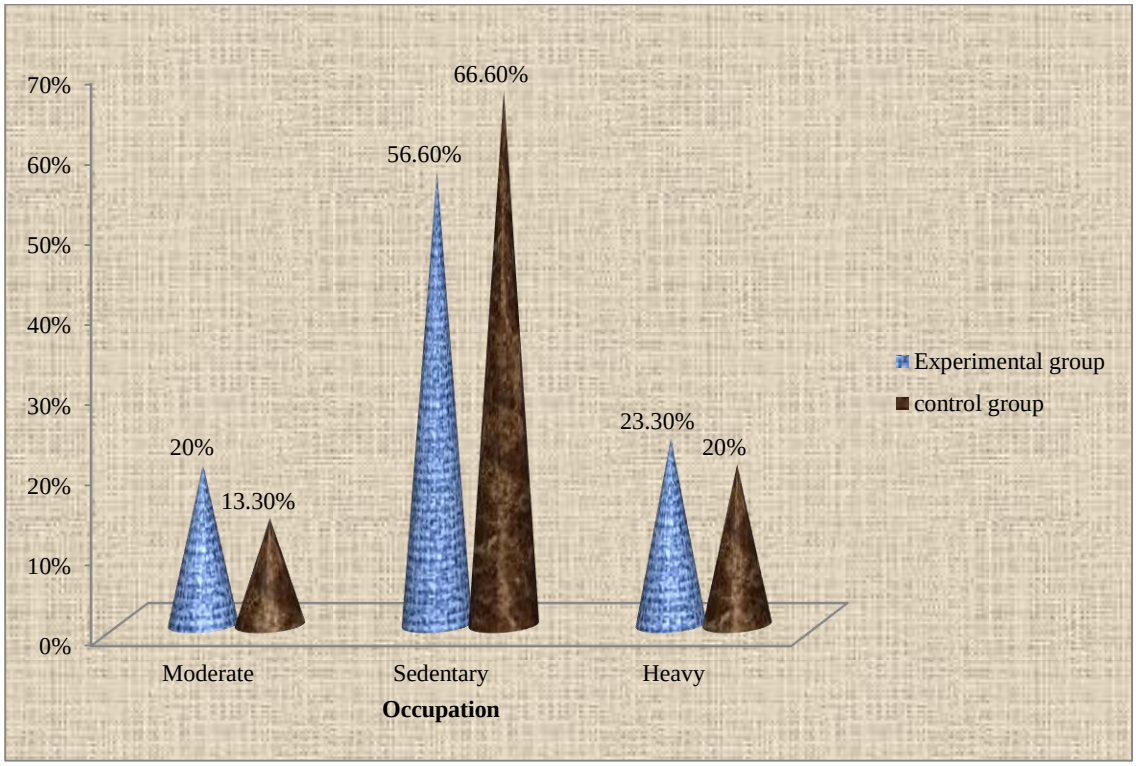


Figure.6 Distribution of samples according to Income

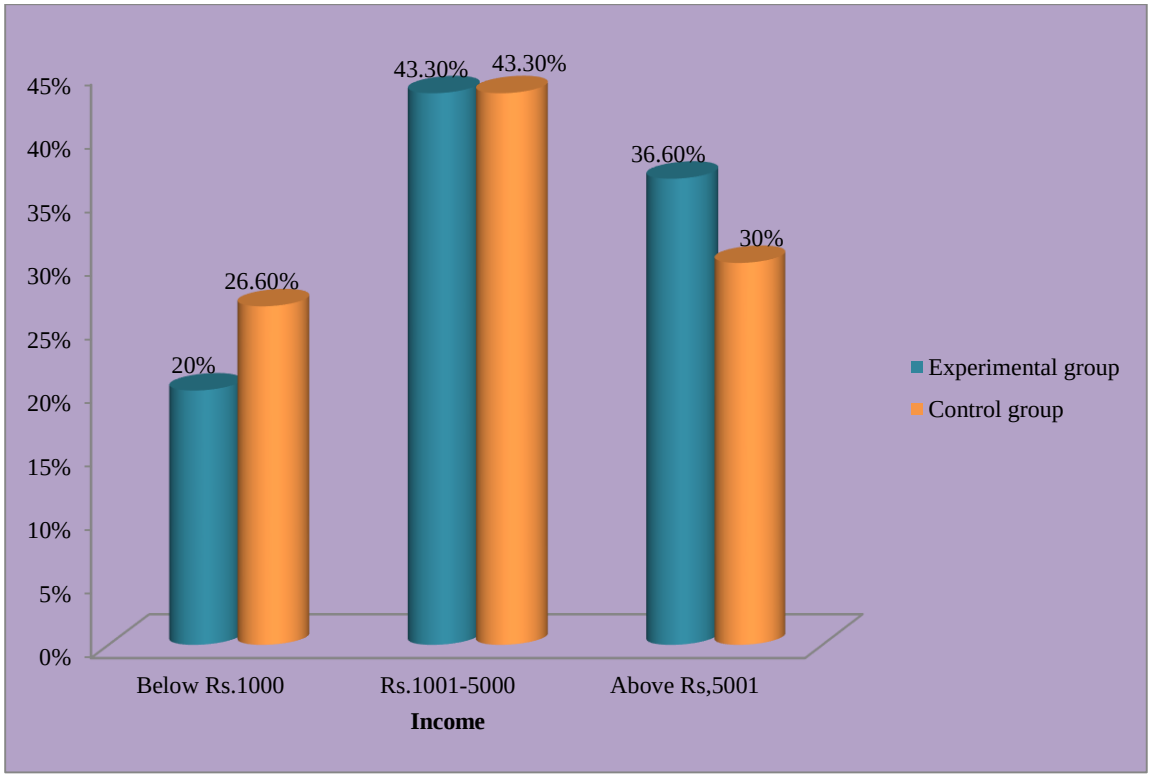


Figure.7 Distribution of samples according to Duration of illness

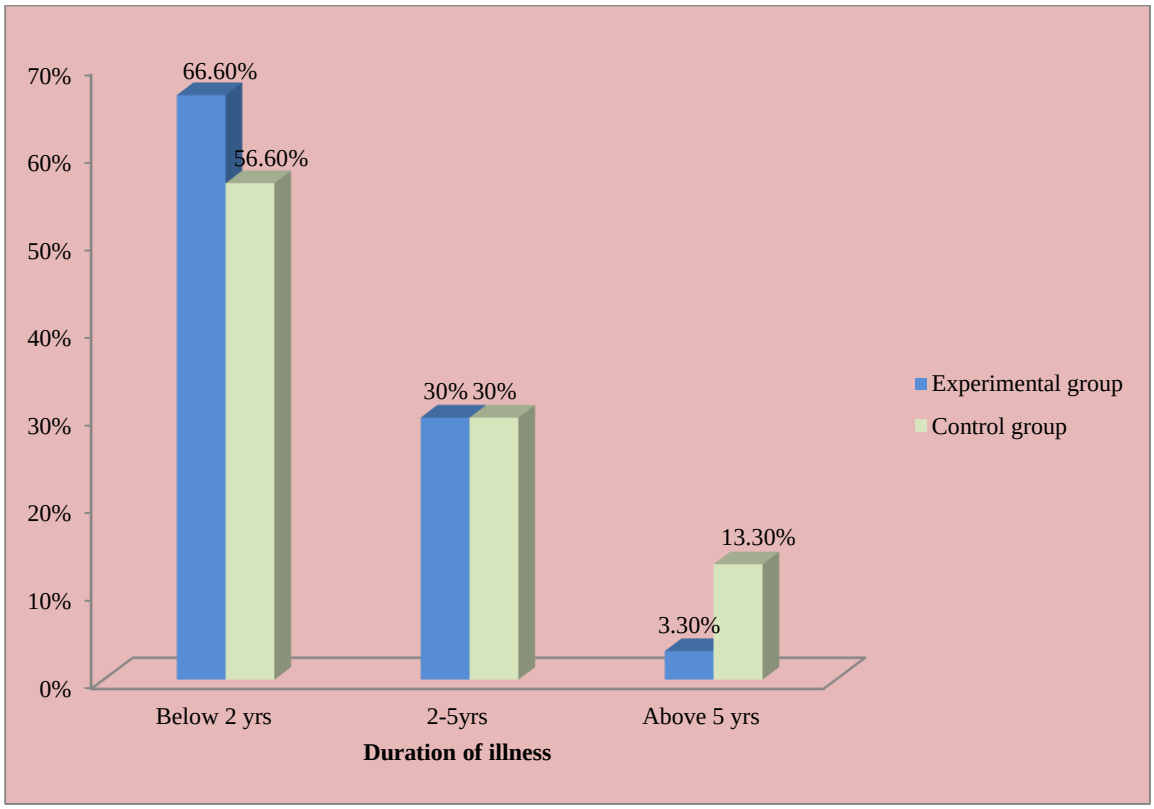


Figure.8 Distribution of samples according to type of family

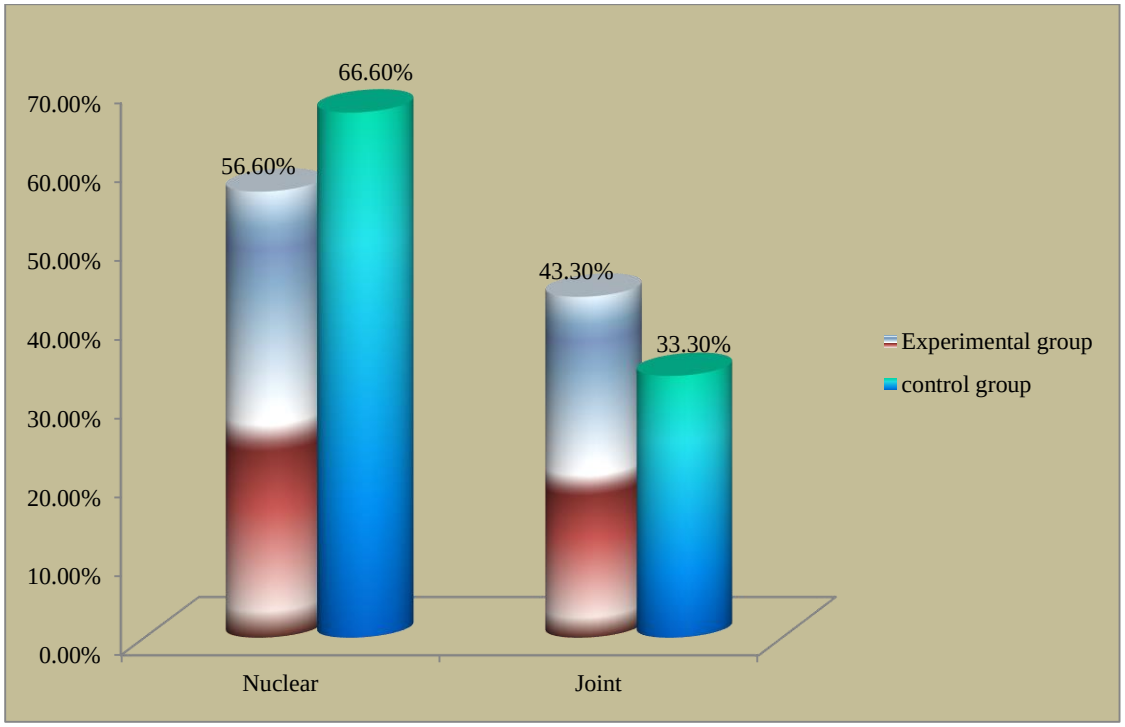


Figure.9 Distribution of samples according to family history of stroke

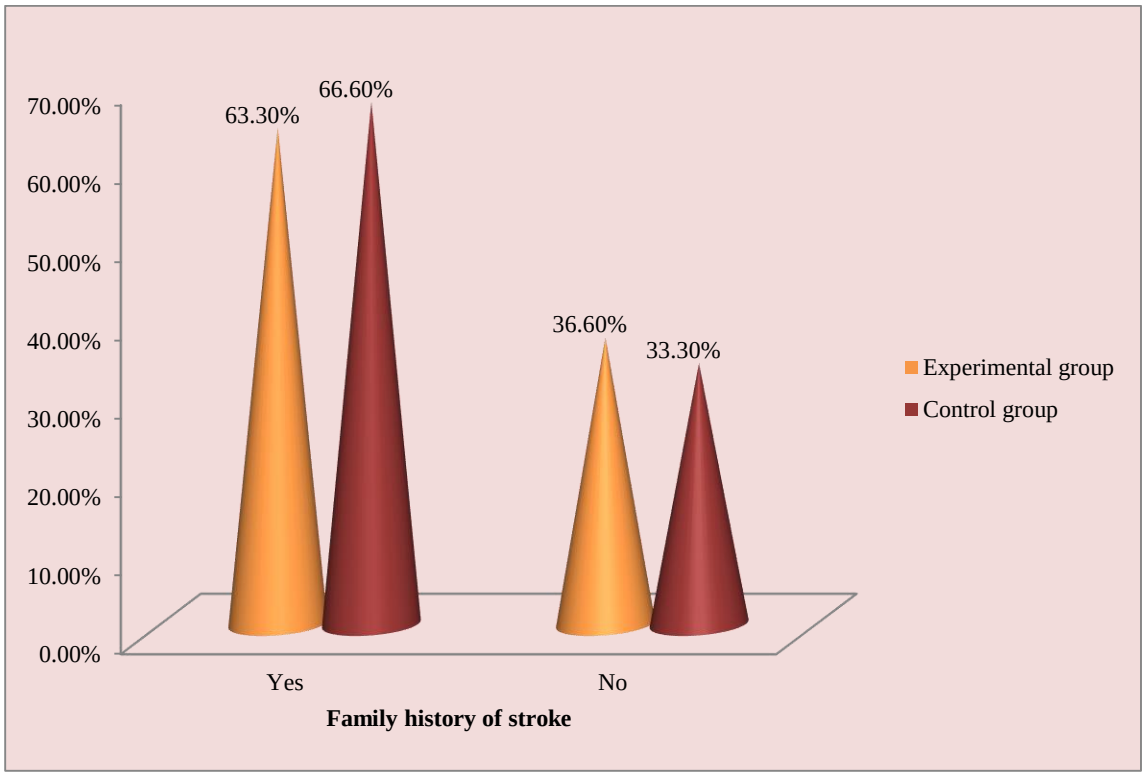


Figure.10 Distribution of samples according to previous hospitalization

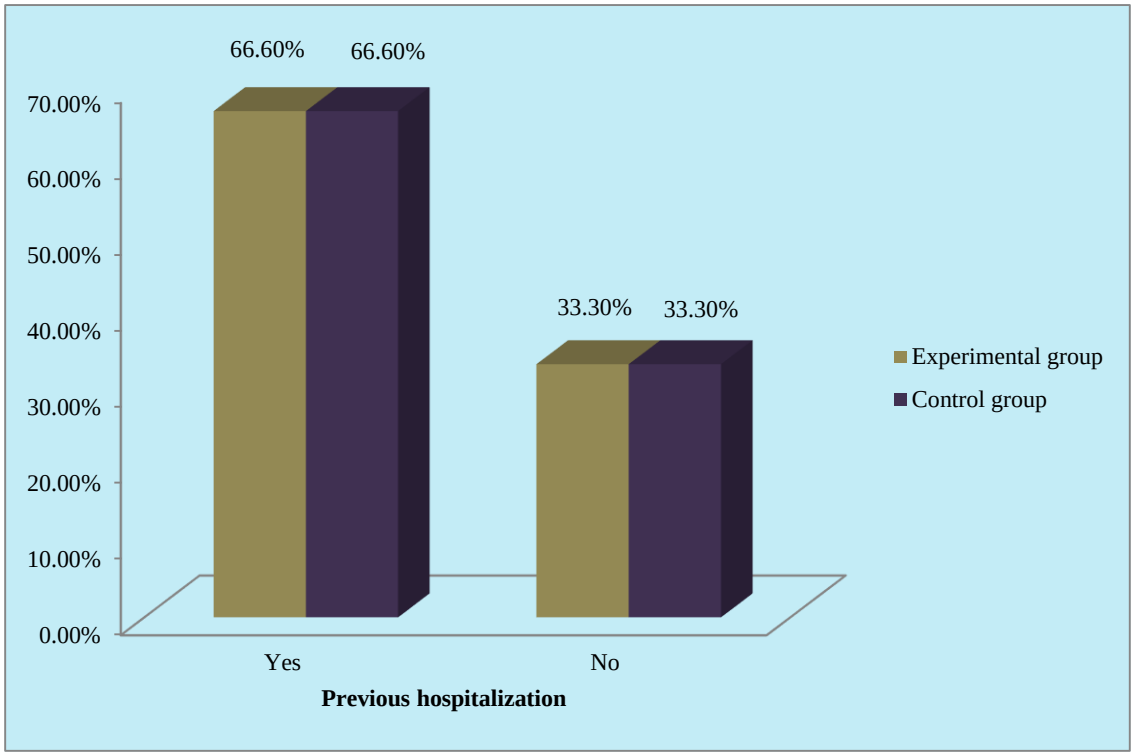


Table-2:

Distribution of samples based on their pre test-and post-test level of pain among experimental and control groups.

Level of pain	Experimental group(n=30)				Control group(n=30)			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	%
Mild	-	-	2	6.6	1	3.3	1	3.3
Moderate	18	40	28	93.3	18	60	21	70
Severe	12	60	-	-	11	36.6	8	26.6

Table 2 shows that in the experimental group, 18(40%) subjects had moderate level of pain, 12(60%) had severe level of pain, no subjects had mild level of pain in the pre test. 2 subjects(6.6%) had mild level of pain, 28 (93.3%) had moderate level of pain in post test. In the control group 1(3.3%) subject had mild level of pain, 18(60%) subjects had moderate level of pain , 11(36.6%) subjects had severe level of pain in the pre test . 1(3.3%) subject had mild level of pain, 21(70%) subjects had moderate level of pain, 8(26.6 %) subjects had severe level of pain in post test.

Figure.11 Distribution of samples based on the level of pain in pre test and post test among experimental group

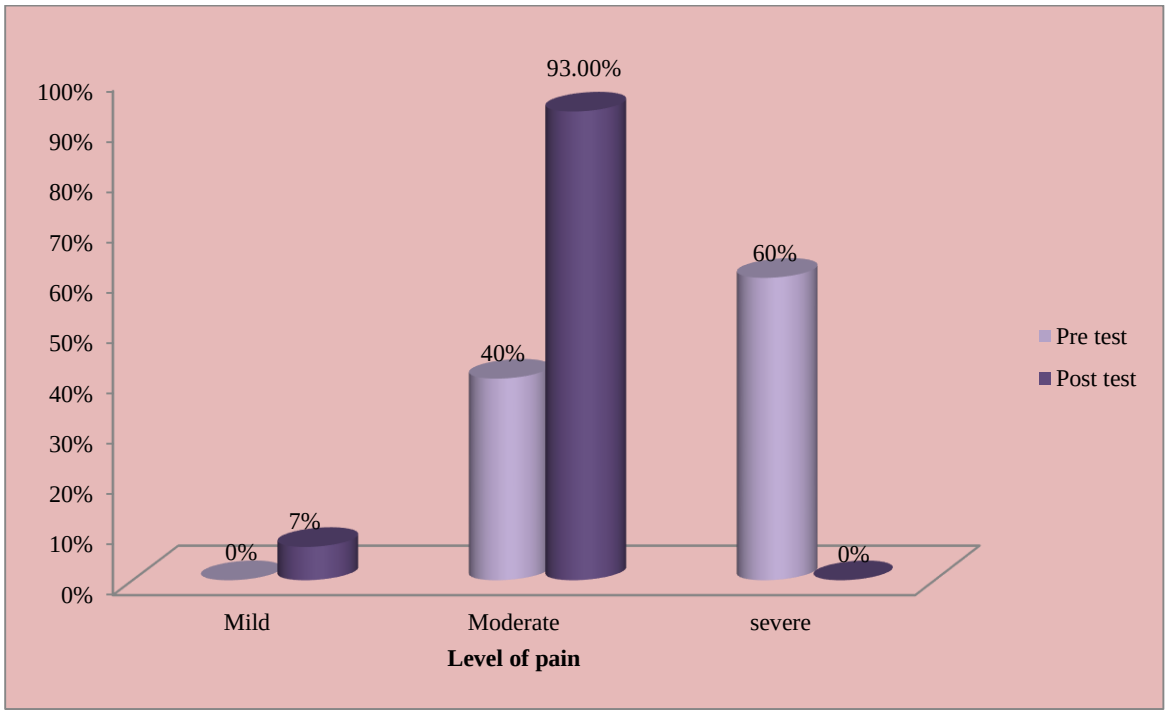


Figure.12 Distribution of samples based on the level of pain in pre test and post test among control group

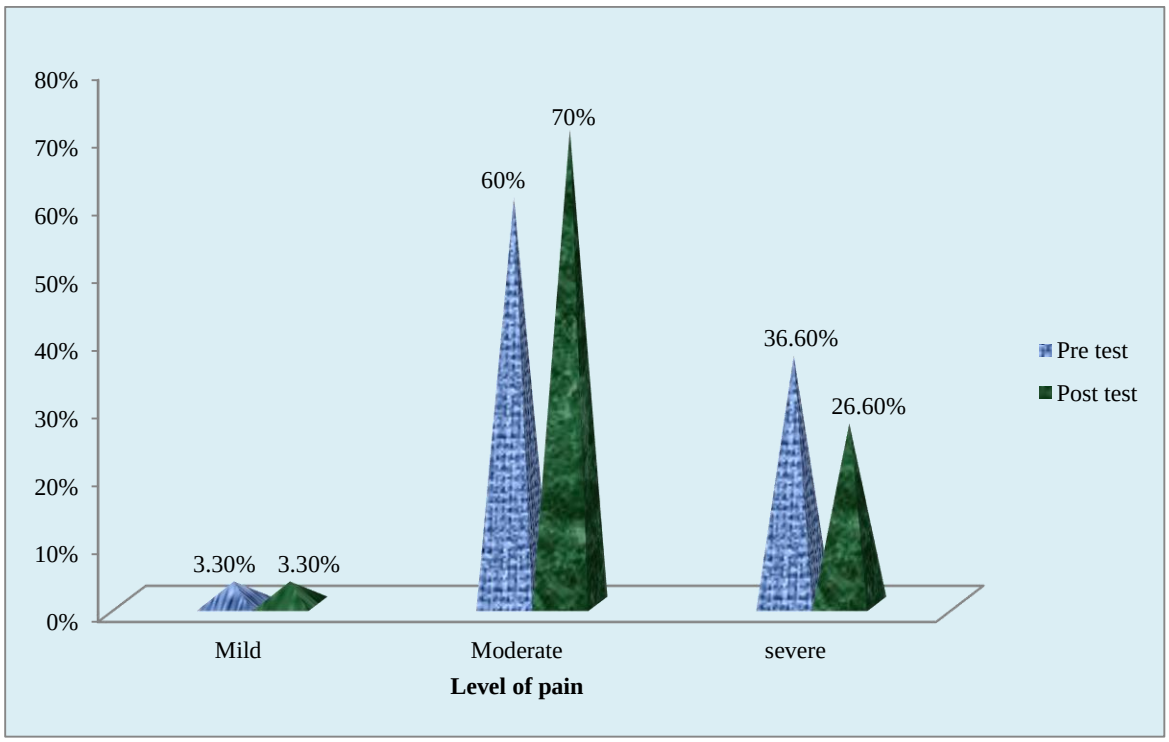


Table-3:

Distribution of samples based on their pre test-and post-test level of anxiety among experimental and control groups.

Level of Anxiety	Experimental group(n=30)				Control group(n=30)			
	Pre-test		Post-test		Pre-test		Post-test	
	f	%	f	%	f	%	f	%
Mild	4	13.3	11	36.6	3	10	2	6.6
Moderate	14	46.6	17	56.6	14	46.6	18	60
Severe	12	40	2	6.6	13	43.3	10	33.3

Table 3 shows that in the experimental group 4(13.3%) subjects had mild level of anxiety, 14(46.6%) had moderate level of anxiety, 12(40%) had severe level of anxiety in pre test.11 (36.6%) subjects had mild level of anxiety, 17 (56.6%) subjects had moderate level of anxiety , 2(6.6%) had severe level of anxiety in post test. In the control group 3(10%) subjects had mild level of anxiety, 14(46.6%) subjects had moderate level of anxiety, and 13 (43.3%) subjects had severe level of anxiety in the pre test. 2(6.6%) subjects had mild level of anxiety, 18(60%) subjects had moderate level, and 10 (33.3 %) subjects had severe level of anxiety in post test.

Fig.13 Distribution of samples based on the level of anxiety in pre test and post test among experimental group

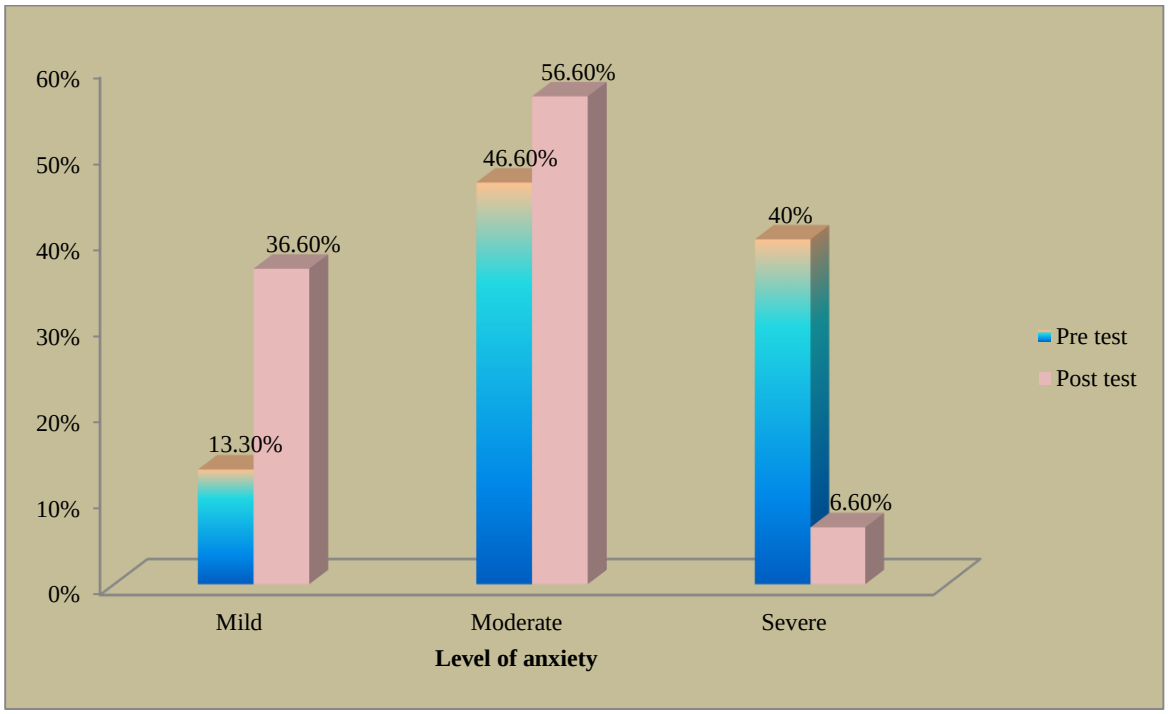
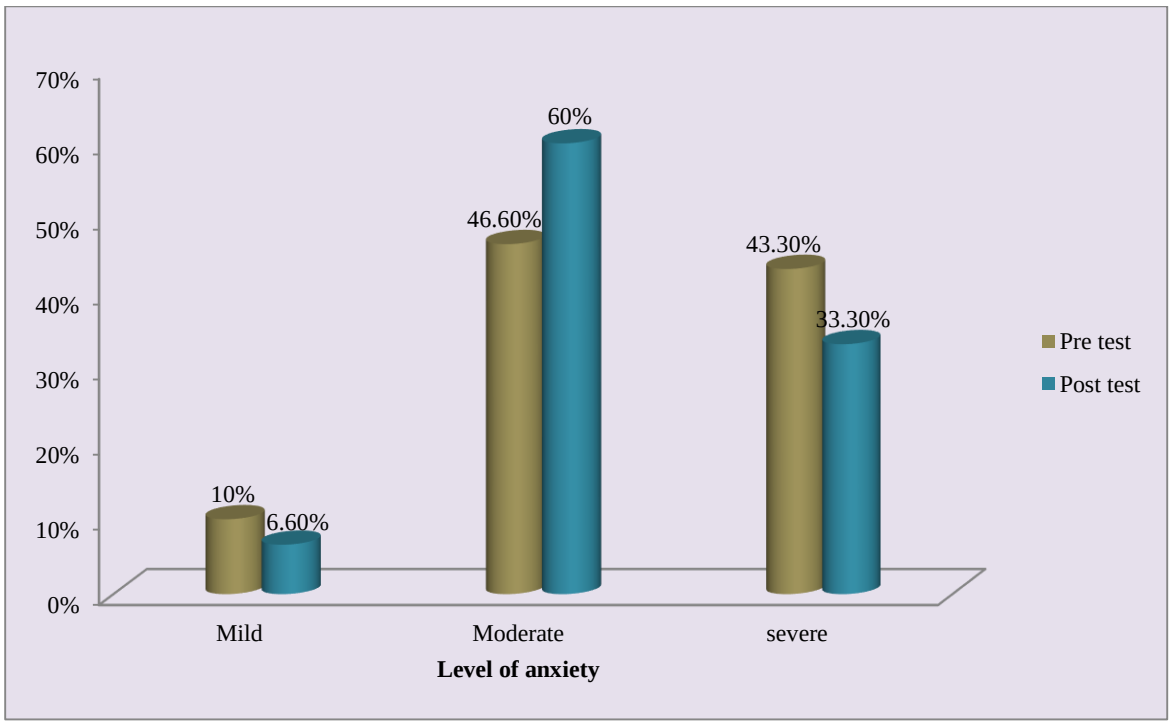


Fig.14 Distribution of samples based on the level of anxiety in pre test and post test among Control group



SECTION-C

Table-4:

Evaluating the effectiveness of back massage on reduction of pain among experimental group.

Measurement	Mean	Mean difference (MD)	Standard deviation (SD)	't' test
Pre test	7.1	2.07	1.24	10.18*
Post test	5.03		1.14	

***Significant at 0.05 level**

Table 4 shows that, in the experimental group the pre test mean value was 7.1 and post test mean value was 5.03 which was lower than the mean pre test value. The calculated 't' value was 10.18 which was higher than the table value at 0.05% level, the difference was statistically significant.

Fig 15 .Distribution of mean and standard deviation of pre test and post test scores in level of pain

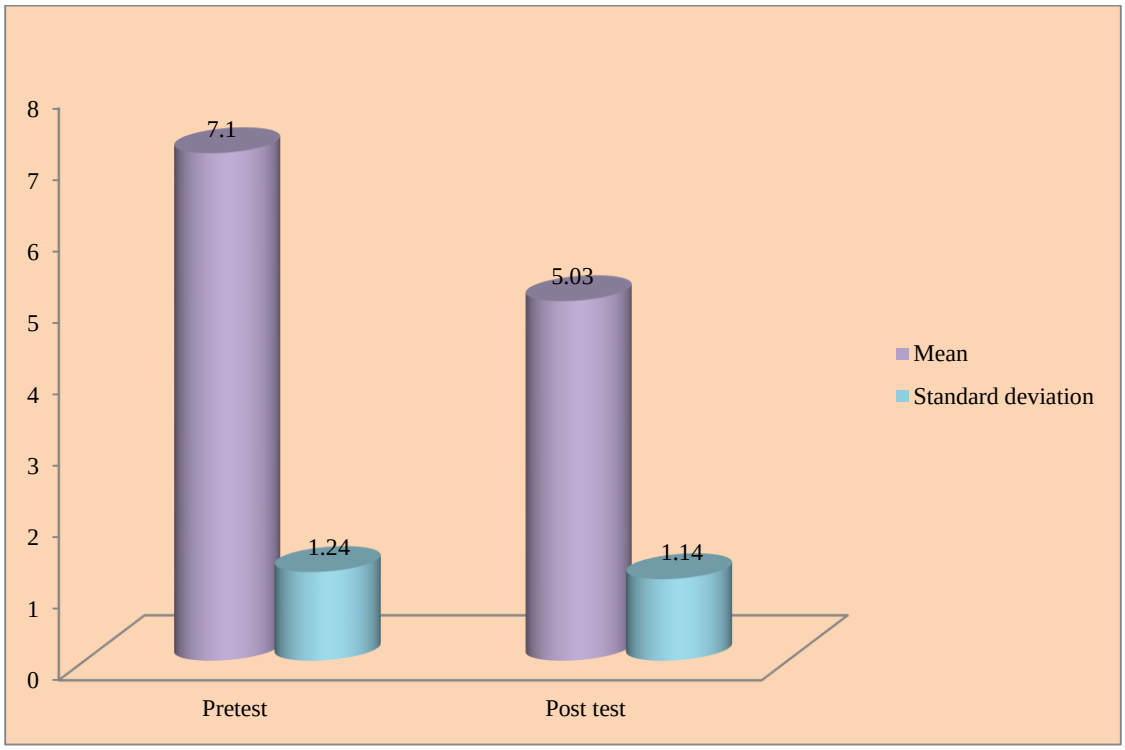


Table-5:

Evaluating the effectiveness of back massage on reduction of anxiety among experimental group.

Measurement	Mean	Mean difference (MD)	Standard deviation (SD)	't' test
Pre test	75.63	12.7	12.54	8.59*
Post test	62.93		8.51	

***Significant at 0.05 level**

Table 5 shows , In experimental group the mean pre test level of anxiety was 75.63 and the mean post test level of anxiety was 62.93 which was lower than the mean pre test value. The calculated' t' value was 8.59 which is higher than the table value at 0.05% level. The difference was statistically significant.

Fig.16 Distribution of mean and standard deviation of pre test and post test scores in level of Anxiety.

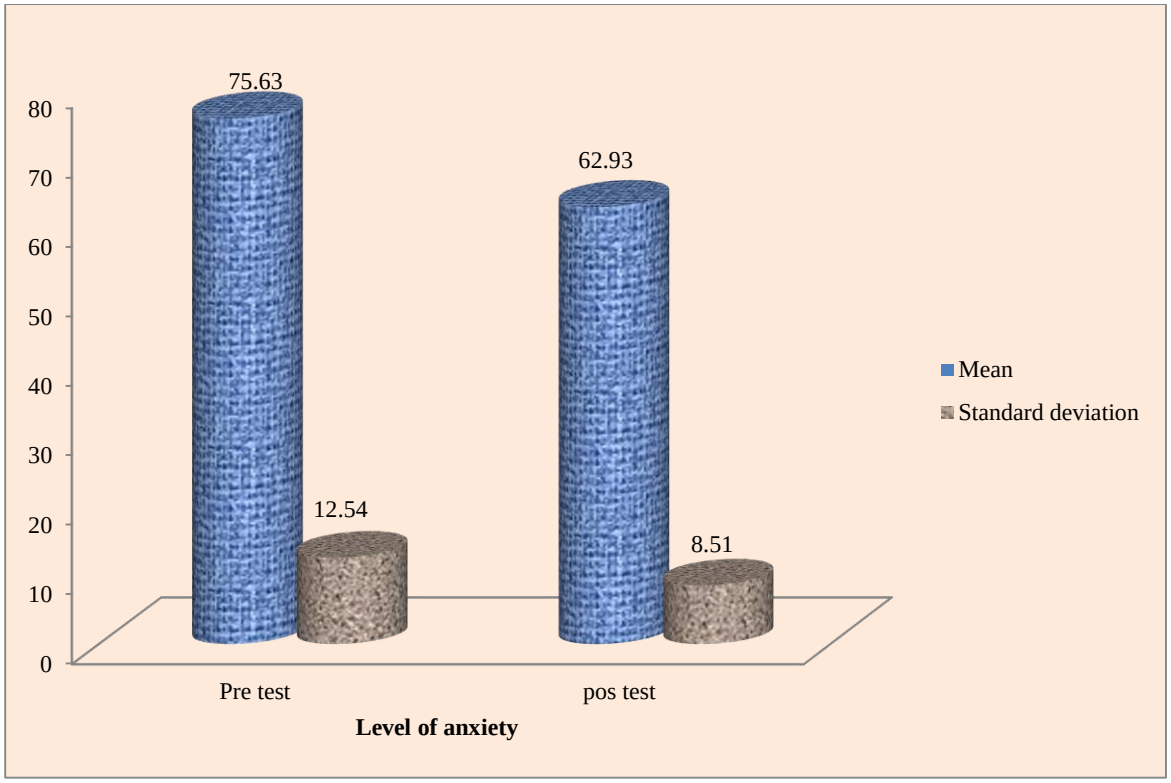


Table :6

Relationship between post test level of pain and anxiety among experimental group.

S. No	Calculated 'r' value	Table 'r' value
1.	0.29^{NS}	0.361

NS- Not significant

The 'r' value of post test level of pain and anxiety was 0.29, there was a positive correlation between pain and anxiety which was not significant.

Table-7:

Association between post-test level of pain with their selected demographic variables among experimental group.

(n=30)

S. No	Demographic variables		Mild	Moderate	Severe	χ^2
1.	Age	Below 40 yrs	-	4	-	0.322#
		41-60yrs	1	12	-	
		Above 61 yrs	1	12	-	
2.	Sex	Male	1	14	-	0.136#
		Female	1	14	-	
3.	Education	Uneducated	3	7	-	6.66*
		Primary education	-	10	-	
		Secondary education	0	10	-	
		Under graduate	-	-	-	
		Post graduate	-	-	-	
4.	Occupation	Moderate	1	5	-	1.47#
		Sedentary	1	16	-	
		Heavy	-	7	-	
5.	Income	Below Rs.1000	1	5	-	1.99#
		Rs.1001-Rs.5000	-	13	-	
		Above Rs .5001	1	10	-	
6.	Duration of illness	Below 2 yrs	2	18	-	1.462#
		2-5 yrs	-	9	-	
		Above 5yrs	-	1	-	

S. No	Demographic variables		Mild	Moderate	Severe	χ^2
7.	Type of family	Nuclear	1	16	-	0.18#
		Joint	1	12	-	
8.	Family history of illness	Yes	2	17	-	1.245#
		No	0	11	-	
9.	Previous hospitalization	Yes	1	19	-	0.275#
		No	1	9	-	

***= Significant at 0.05 level**

#= Not significant at 0.05 level

Table-7 shows the association between post-test level of pain and their selected demographic variables. The results shows that the calculated value for education was greater than the table value. So, it is concluded that there was a **significant association** between post-test level of pain and education among experimental group.

Table-8:

Association between post-test level of anxiety with their selected demographic variables among experimental group.

(n=30)

S. No	Demographic Variables		Mild	Moderate	Severe	χ^2
1.	Age	Below 40 yrs	3	1	2	10.56*
		41-60yrs	4	9	0	
		Above 61 yrs	4	7	0	
2.	Sex	Male	6	8	2	2.038#
		Female	5	9	-	
3.	Education	Uneducated	9	9	0	13.92*
		Primary education	1	5	1	
		Secondary education	0	1	1	
		Under graduate	1	6	-	
		Post graduate	-	-	-	
4.	Occupation	Moderate	3	1	2	10.56*
		Sedentary	4	9	-	
		Heavy	4	7	-	
5.	Income	Below Rs.1000	3	1	2	10.56*
		Rs.1000-Rs.5000	4	9	-	
		Above Rs .5000	4	7	-	
6.	Duration of illness	Below 2 yrs	7	11	2	1.885#
		2-5 yrs	4	5	-	
		Above 5yrs	-	1	-	

S. No	Demographic Variables		Mild	Moderate	Severe	χ^2
7.	Type of family	Nuclear	5	11	1	
		Joint	6	6	1	1.05#
8.	Family history of illness	Yes	7	10	2	
		No	4	7	-	1.313#
9.	Previous hospitalization	Yes	7	12	1	
		No	4	5	1	0.801#

***= Significant at 0.05 level**

#= Not significant at 0.05 level

Table-8 shows the association between post-test level of anxiety and their selected demographic variables. The results showed that the calculated value for age, education, income, occupation was greater than the table value (at 0.05 level). So, it is concluded that there was a **significant association** between post-test level of anxiety and education, age, income, occupation in experimental group.

CHAPTER – V

DISCUSSION

The aim of the study was to assess the effectiveness of back massage on reduction of pain and anxiety among patients with stroke at selected hospitals Madurai

The research design adopted for this study was Quasi-experimental design. The setting of the study was in Dr.V.Neethiarasu Neuro Hospital & Dr.Devadoss Multi Speciality Hospital at Madurai. The sample size was 60, in which 30 samples were in the experimental group and 30 samples in the control group.

The Objectives of the study were:

- To assess the pre and post test level of pain and anxiety among patients with stroke in experimental group.
- To assess the pre and post test level of pain and anxiety and among patients with stroke in control group.
- To evaluate the effectiveness of back massage on reducing pain and anxiety among patients with stroke in experimental group.
- To find out the relationship between post test level of pain and anxiety among patients with stroke in experimental group.
- To find out the association between post test level of pain with their selected demographic variables in experimental group.
- To find out the association between post test level of anxiety with their selected demographic variables in experimental group.

“**To assess the pre and post test level of pain and anxiety among patients with stroke in experimental group”.**

The level of pain in the experimental group revealed that no subjects had mild level of pain, 18(60%) subjects had moderate level of pain, 12(40%) had severe level of pain in the pre test In the post test 2(6.6%) had mild level of pain, 28 (93.3%) had moderate level of pain, no subjects had severe level of pain. The level of anxiety showed that 4(13.3%) subjects had mild level of anxiety, 14(46.6%) had moderate level of anxiety, 12(40%) had severe level of anxiety in pre test and in post test 11 (36.6%) subjects had mild level of anxiety, 17 (56.6%) subjects had moderate level of anxiety , 2(6.6%) had severe level of anxiety.

The study was supported by **Ingrid Lingren** (2010) A prospective population study was conducted on shoulder pain among patients with stroke. 416 first-ever stroke patients were included in the population-based Lund Stroke Register. After 4 months, 327 patients were followed up and 1 year later, 305 patients were followed up again. Shoulder pain onset within 2 months after stroke was reported by 71 patients (22%). Among that, 61 patients were able to score the visual analogue scale, and 79% had moderate–severe pain.

The researcher felt that the shoulder pain was predominantly present in stroke patients. It was extremely affected the upper arm function and make the client to be independent on the care givers .An anxiety was a deleterious variable, produce the loss of control over the body parts .The level of anxiety was based on the level of dependency of the client.

“To assess the pre and post test level of pain and anxiety among patients with stroke in control group”.

Among the control group the results showed that 1(3.3%) subject had mild level of pain, 18(60%) subjects had moderate level of pain, 11(36.6%) subjects had severe level of pain in the pre test. In the post test 1(3.3%) subject had mild level, 21(70%) subjects had moderate level of pain, 8(26.6%) subjects had severe level of pain. In the control group 3(10%) subjects had mild level of anxiety, 14(46.6%) subjects had moderate level of anxiety, 13(43.3%) subjects had severe level of anxiety in the pre test. 2(6.6%) subjects had mild level of anxiety, 18(60%) subjects had moderate level of anxiety, 10(33.3 %) subjects had severe level of anxiety in post test.

The result was supported by **Lynne Turner, Diana Jackson** (2013) et.al., conducted a study on the incidence of post stroke shoulder pain among patients with stroke. The study concluded that among 100 subjects, 75 subjects developed shoulder pain after the episode of stroke.

The researcher assumes that since the subjects in the control group did not receive back massage, there is no remarkable reduction in the level of pain and anxiety. She conclude that back massage have a greater impact in reducing pain and anxiety among clients with stroke.

“To evaluate the effectiveness of back massage on reducing pain and anxiety among patients with stroke in experimental group”.

The researcher found that the mean pre-test level of pain is 7.1 and mean post-test level of pain was 5.03, which is higher than the table value at 0.05% level. The calculated ‘t’ value was 10.18 greater than the table value and it is statistically significant at 0.05% level. In the experimental group the mean pre-test level of anxiety was 75.63 and mean post-test level of anxiety was 62.93. The calculated‘ t’ value was 8.59 is greater than the table value which was statistically significant at 0.05% level.

The result of the study was supported by **Suethanpornkul S** (2014) did a study on the effect of back massage on post stroke shoulder subluxation and shoulder pain. 60 subjects were included, 30 subjects were in experimental group, 30 were in control group. The experimental group received 3 days back massage which showed the significant reduction in the level of pain. The results revealed that there was a measurable reduction in pain with complimentary therapy of massage.

The researcher assumed that massage therapy promotes circulation and oxygenation to the tissues .It produce muscle relaxation which will reduce spasticity of the muscle. Previous researches revealed that most of stress accumulate in the back and shoulder. So, it could be concluded that back massage will be helpful in reducing anxiety.

“To find out the relationship between post test level of pain and anxiety among patients with stroke in experimental group”.

The ‘r’ value of post test level of pain and anxiety was 0.29, there was a positive correlation between pain and anxiety which was not significant.

Anuar et.al.,(2012) conducted a correlational study on the level of anxiety and pain among chronic bed ridden stroke patients . The results showed that among 100 subjects 90% of the subjects had increased level of anxiety and 80% of the subjects had increased level of pain which was measured by VAS pain scale and anxiety rating scale.

The researcher, think that the anxiety among post stroke patients was not only due to pain but various other factors like sleeplessness, confusion, immobility, dependency, slowed prognosis will influence anxiety. Pain is a subjective feeling and the perception of pain also vary from individual to individual. Pain activate the limbic system in the brain and, it could only control the emotional reactions. The researcher concluded that there was a positive correlation between the pain and anxiety.

“To find out the association between post test level of pain with their selected demographic variables”.

The results showed that there was association between post-test level of pain and education . Since the calculated value for education was greater than the table value. So, it could be concluded that there was a **significant association** between post-test level of pain and education among experimental group.

Esther Mok And Chin Pang Woo(2011) conducted a study on the effect of slow stroke back massage on anxiety and shoulder pain in elderly stroke patients in Hong Kong . Participants were stroke patients, experiencing shoulder pain and not already receiving pain relief measures. One hundred and two subjects participated which include massage group and control group. Results of the study showed that subjects in the massage group had significantly lower level pain, anxiety, blood pressure and heart rate compared to subjects in the control group. Three days after these improvements were maintained among who received massage therapy.

The present study result was supported by **Prabhudeva (2012**) he conducted a comparative study on the coping mechanism for prolonged hospital stay among educated and uneducated patients. The results revealed that coping ability was higher for the educated client than the uneducated clients.

The researcher felt that the educated client have higher level of coping ability, thus the level of pain is less among educated client.

"To find out the association between post test level of anxiety with their selected demographic variables".

The results shows that the calculated value for age, education, income, occupation is greater than the table value (at 0.05 level). So, it is concluded that there is a **significant association** between post-test level of anxiety and age ,income, occupation education in experimental group.

Roberta c. weoss (2015) conducted a descriptive study on the level of anxiety in young age stroke patients. The results revealed that there was an increased anxiety (severe) recorded in young stroke clients and also had a fear about their mobility and prognosis.

The researcher think that due to slow prognosis the young adult have increased level of anxiety than older adult. When the subjects are economically stable, their financial burden will be less compared economically depressed subjects. So the researcher concluded that, age economic status, income are the precipitating factors which induce anxiety among stroke clients.

CHAPTER – VI

SUMMARY, IMPLICATIONS, RECOMMENDATIONS AND CONCLUSION

This chapter deals with summary, implications for nursing practice, nursing education, nursing administration and nursing research, recommendations and conclusion.

SUMMARY

A Quasi experimental study was conducted to assess the effectiveness of back massage on reduction of pain and anxiety among patients with stroke at selected hospital Madurai. The research design was quasi experimental research design. Sample size was 60 (n=30 samples in both experimental group and control group). Purposive sampling technique was used to select the samples.

The objective of the study was to examine whether the back massage is an effective therapy for the reduction of pain and anxiety among patients with stroke.

The conceptual framework adopted for this study was based on modified Ludwig von bertanlanffy's general system model (1968).

Numerical pain scale and modified anxiety rating scale were used to measure the level of pain and anxiety in both experimental and the control groups. Method of data collection includes monitoring the pre-test level of pain and anxiety by using numerical pain scale, anxiety rating scales. The experimental group was received back massage for 5 days. After 5 days, the post-test level of anxiety and pain was measured for both experimental and control groups.

The collected data was tabulated and analyzed. Biostatistical methods such as paired ‘t’ test and chi- square were used for analysis.

MAJOR FINDINGS OF THE STUDY

- With regard to age, 43.3% subjects were between 41-60years and above 60 years in the experimental group and 66.6% subjects were between the age group of 41-60 years of age in the control group.
- With regard to sex, in the experimental group 53.3% subjects were males and 50% subjects were males in the control group.
- Regarding the educational status 9 (30%) subjects had higher secondary education in the experimental group and 10 (33.3%) subjects had primary education in the control group.
- Regarding the occupation in the experimental group 17 (56.6%) subjects were sedentary workers and in the control group 20 (66.6%) were sedentary workers.
- Regarding the family income, majority of samples 13(43.3%) were getting an income between Rs 1001-5000 in the experimental group and 13 (43.3%) samples were getting Rs 1001-5000 in the control group.
- Regarding the duration of illness 20(66.6%) subjects were less than 2 yrs of duration in the experimental group and 9(30%) were having 2-5 yrs of duration in the control group.
- Regarding the type of family in the experimental group 17(53.3%) subjects belong to nuclear family and in the control group 20(66.6%) subjects belong to nuclear family.

- Regarding the family history of stroke 19(63.3%) had the history of stroke among experimental group and 22 (73.3%) had the history of stroke in control group.
- Regarding the hospitalization in the experimental group 20(66.6%) subjects had the experience of previous hospitalization and in the control group 20(66.6%) subjects had the experience of previous hospitalization.
- The mean post-test level of pain (5.03) which was lower than (7.1) the mean pre test level of pain in the experimental group.
- The mean post-test level of anxiety (62.93) was lower than the mean pre-test level of anxiety (75.63) in the experimental group.
- There was a significant association between post-test level of pain and education among experimental group.
- There was a significant association between post test level of anxiety and age, income, occupation, education among experimental group.

IMPLICATIONS

The findings of the present study indicated that the massage therapy had got the benefits of improving blood circulation to the tissue and relax the mind. So it could be applied to reduce shoulder pain and anxiety. It is proved to be effective as non pharmacologic management to reduce pain and anxiety. The findings of the study had several implications for the following fields.

Implications in Nursing Practice

- The findings of the study help the nursing personnel to include massage therapy as a nursing intervention while caring patients with stroke.
- Massage therapy could be included as a routine therapy in the stroke unit since it is a cheap and very effective to reduce pain and anxiety.
- Care givers of stroke patients could be taught about the massage therapy and its importance as an effective intervention technique.
- The study findings helps the nursing students to compare massage therapy with other complimentary therapies in reducing pain and anxiety.

Implications in Nursing Education

- The study may enhance the nursing students to acquire knowledge about massage therapy and its use in relieving pain and anxiety .
- The effectiveness of back massage in reducing pain and anxiety may be published in the nursing journals to make awareness among the nursing students.
- Nurse educators should teach, supervise and encourage the nursing students to educate and practice about massage therapy while caring a patient with stroke.
- Complimentary therapy like massage, laughter therapy could be added as a intervention in the nursing curriculum.
- This study results can be quoted by the nurse educator during lecture regarding stroke.

- ❖ Nurse educators can arrange continuing nursing education programs for the faculty to update their knowledge regarding the effect of back massage.

Implications in Nursing Administration

- ❖ Nursing administrator may encourage the nursing staff to attend/participate in workshop on complimentary therapies.
- ❖ Nursing Administrator can arrange a in-service education programme for nurses regarding the importance of back massage.
- ❖ Pamphlets/video clips could be prepared on massage therapy which could be used in stroke units.

Implications in Nursing Research

- ❖ This study can be a baseline for future studies to build upon and motivate the investigators to conduct further studies on complimentary therapies.
- ❖ The nurse researcher should present/ publish her study in the conferences, workshops and through other media ,thereby more research studies could be conducted .
- ❖ Nurse researcher should identify the constraints and barriers in practising back massage and the way to solve such problems .

RECOMMENDATIONS

- ❖ The study may be conducted by using large populations to generalize the findings.
- ❖ A longitudinal study may be conducted to assess the effectiveness of back massage on reducing pain and anxiety among stroke patients.

- ❖ This study may also be done as a comparative study in different settings.
- ❖ Further researcher can be done to identify the effects of back massage among patients with orthopaedic conditions.
- ❖ The effectiveness of back massage on reducing physiological parameters such as temperature, blood pressure, heart rate could be studied.
- ❖ A follow up study may be conducted to find out whether the patients are practicing back massage regularly or not.

CONCLUSION

As for this research is concerned, the interventional study proved that there is a significant reduction on pain and anxiety level among patients with stroke. The findings of the present study agree with the findings of the previous clinical study, regarding back massage. Pharmacological interventions give physiological relaxation and some extent it will give psychological relaxation also, but non pharmacological intervention is mainly deals with the mind and body. In non pharmacological therapy touch is a language spoken through the hands and understood by the heart. The reduction of pain and anxiety level was statistically significant at 0.05 level. Therefore the back massage is a very effective non-pharmacological intervention to reduce the pain and anxiety among stroke patients.

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- www.google.com

- www.wikepedia.com
- www.ask.com
- www.painclinic.com
- www.chow.com
- www.zwagle.com
- http:// www.bing.com/.

APPENDIX-I

COPY OF LETTER SEEKING PERMISSION FROM THE ETHICAL COMMITTEE

MATHA COLLEGE OF NURSING
Annavasal Road, Vaanpuram, Manamadurai-630 606, Sivagangai District, Tamilnadu.
(Sponsored by Matha Memorial Education Trust)
(Affliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai-32)
(Recognized by The Tamil Nadu Nurse and midwives Council, Chennai and Indian Nursing Council, New Delhi)
Mob : 99655 17824, 95245 02111 E-mail : nursingcollegmatha@yahoo.com

Date : 15.12.2017

ETHICAL COMMITTEE

The following members are ethics committee were present at the meeting held on 15/12/17 at 2.15 pm in Matha College Of Nursing.

CHAIR PERSON

1. Dr. J.JOHN PETER JESUDASS, M.B.B.S, FICC, FFM,C.Diab,
   Asst.Medical Director, Matha Mission Hospital,
   Matha Memorial Educational Trust, Manamadurai-630606.

DEPUTY CHAIRMAN

2. Prof. J.F.SUJATHA, M.Sc., (N)
   Principal,
   Matha College Of Nursing, Manamadurai – 630606.

MEMBER SECRETARY

3. Prof.M.KALAISELVI, M.Sc., (N)
   Vice principal, Head, Department of Medical Surgical Nursing,
   Matha College Of Nursing, Manamadurai – 630606.

MEMBERS PRESENT

4. Prof.K.VARAPRASATHABABU, M.Sc., (N)
   Head, Department of Psychiatric Nursing,
   Matha College Of Nursing, Manamadurai – 630606.

MATHA COLLEGE OF NURSING

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(Recognized by The Tamil Nadu Nurse and midwives Council, Chennai and Indian Nursing Council, New Delhi)

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Date : 15.12.2017

5. Mrs.ASHA, M.Sc., (N)

   Professor, Department of Medical Surgical Nursing,

   Matha College Of Nursing, Manamadurai – 630606.

6. Prof.Mrs.S.SIVAPRIYAA, M.Sc., (N)

   Head, Department of Pediatric Nursing,

   Matha College Of Nursing, Manamadurai – 630606.

7. Mr.ADHIMOOLAM, MA.BL

   Advocate and Notary Public, Manamadurai-630606.

8. Dr.J.NANCY SARAL MARY M.B.B.S,

   Pathologist,

   Matha Mission Hospital, Manamadurai-630606.

RESOLUTION – 1/2017

It is resolved to accept **Mr. P. VINOTHKUMAR** to conduct a study to assess the effectiveness of back massage on reduction of pain and anxiety among patients with stroke in selected hospitals madurai."

The institutional Ethics Committee expects to be informed about the progress of the study, any changes in the protocol, patient information and tasks to be provided a copy of the final report.

Yours Sincerely

Chair Person

Ethics Committee

Dr. J. JOHN PETER JESUDASS, M.D.
ASSISTANT MEDICAL DIRECTOR
MATHA MISSION HOSPITAL
MANAMADURAI-630606

MATHA COLLEGE OF NURSING
MANAMADURAI 630606
SIVAGANGAI DT
TAMILNADU
INDIA
VAANPURAM

Deputy chairman

Ethics Committee

PRINCIPAL
MATHA COLLEGE OF NURSING
VAANPURAM, MANAMADURAI-630 606
Sivagangai District

APPENDIX-II

COPY OF LETTER SEEKING PERMISSION TO CONDUCT THE STUDY

MATHA COLLEGE OF NURSING
Annavasal Road, Vaanpuram, Manamadurai-630 606, Sivagangai District, Tamilnadu.
(Sponsored by Matha Memorial Education Trust)
(Affliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai-32)
(Recognized by The Tamil Nadu Nurse and midwives Council, Chennai and Indian Nursing Council, New Delhi)
Mob : 99655 17824, 95245 02111 E-mail : nursingcollegmatha@yahoo.com

Date : .....

LETTER SEEKING PERMISSION TO CONDUCT STUDY AT V.NEETHIARASU NEURO HOSPITAL, MADURAI

To

The Managing Director,
Neurologist,
V.NeethiArasu Neuro Hospital,
Madurai.

Respected Sir/madam,

Sub: Requisition for giving permission to conduct the research in your esteemed organization.

****

I wish to state that **Mr.P.Vinothkumar**, one of our final year M.Sc. Nursing student, Matha College of Nursing, Manamadurai has to conduct a project, as the partial fulfillment of university requirements for the degree of Master of Science in Nursing.

The statement of the problem is:

A STUDY TO ASSESS THE EFFECTIVENESS OF BACK MASSAGE ON REDUCTION OF PAIN AND ANXIETY AMONG PATIENTS WITH STROKE AT SELECTED HOSPITALS MADURAI."

We request you to kindly permit him to do the research in your esteemed institution and give her valuable guidance and suggestions.

Thanking you,

V. NEETHI ARASU NEURO HOSPITAL
No. 29-A [illegible] Road
MADURAI
Ph: 0452-2585466 Cell: 89036 28546

Yours faithfully,

Prof. Mrs.J.F. Sujatha; M.Sc (N),
Principal

PRINCIPAL
MATHA COLLEGE OF NURSING
VAANPURAM, MANAMADURAI-630 606
Sivagangai District

MATHA COLLEGE OF NURSING

Annavasal Road, Vaanpuram, Manamadurai-630 606, Sivagangai District, Tamilnadu.

(Sponsored by Matha Memorial Education Trust)

(Affliated to the Tamil Nadu Dr. M.G.R. Medical University, Chennai-32)

(Recognized by The Tamil Nadu Nurse and midwives Council, Chennai and Indian Nursing Council, New Delhi)

Mob : 99655 17824, 95245 02111 E-mail : nursingcollegmatha@yahoo.com

Date : .....

LETTER SEEKING PERMISSION TO CONDUCT STUDY AT DEVADOSS MULTI SPECIALITY HOSPITAL, MADURAI

To

The Managing Director,
Devadoss Multi Speciality Hospital,
Madurai.

Respected Sir/madam,

Sub: Requisition for giving permission to conduct the research in your esteemed organization.

****

I wish to state that **Mr.P.Vinothkumar**, one of our final year M.Sc. Nursing student, Matha College of Nursing, Manamadurai has to conduct a project, as the partial fulfillment of university requirements for the degree of Master of Science in Nursing.

The statement of the problem is:

A STUDY TO ASSESS THE EFFECTIVENESS OF BACK MASSAGE ON REDUCTION OF PAIN AND ANXIETY AMONG PATIENTS WITH STROKE AT SELECTED HOSPITALS MADURAI."

We request you to kindly permit him to do the research in your esteemed institution and give her valuable guidance and suggestions.

Thanking you,

Yours faithfully,

Prof. Mrs.J.F. Sujatha; M.Sc (N),
Principal

PRINCIPAL
MATHA COLLEGE OF NURSING
VAANPURAM, MANAMADURAI-630 606
Sivagangai District

APPENDIX-III

COPY OF LETTER SEEKING EXPERT OPINION FOR TOOL AND CONTENT VALIDITY

From

P.Vinothkumar,
M.Sc (N) II year,
Matha College of Nursing,
Manamadurai.

To

Respected Sir/Madam

SUB: Requesting opinions and suggestions of experts for the content validity and validity of tool.

I am a post graduate student (Medical surgical specialty) of Matha College of Nursing . I have selected the mentioned topic for research project to be submitted to DR.M.G.R. Medical University, Chennai as fulfillment of Master of Science in Nursing.

Problem statement

"A study to assess the effectiveness of back massage on reduction of pain and anxiety among patients with stroke at selected hospitals madurai."

With regard to this may I kindly request you to validate my content and tool for its relevancy. I am enclosing the objectives of the study. I would be highly obliged and remain thankful if you could validate and give it as early as possible.

Thanking You

Place: Manamadurai
Date:

Yours Faithfully
P.Vinothkumar.

LIST OF EXPERTS OPINION FOR CONTENT VALIDITY

1. **Dr.V.Neethi Arasu, M.D.D.M**
   Neurologist,
   V.NeethiArasu Neuro Hospital,
   Madurai.

2. **Mrs.Priscilla M.Sc.(N), (Ph.D.),**
   Professor in Medical Surgical Nursing,
   CSI College of Nursing,
   Madurai.

3. **Mrs.Visalatchi, M.Sc.(N)**
   Professor in Medical Surgical Nursing,
   Rass academy College of Nursing,
   Poovandhi.

4. **Mrs. Jasmine jenifer gladys, M.Sc.(N)**
   Professor in Medical Surgical Nursing,
   Srinithi College of nursing,
   Madurai.

5. **Mrs.Karpagam, M.Sc. (N),**
   Asso.Prof. in Medical Surgical Nursing,
   Rass academy College of Nursing,
   Poovandhi.

6. Prof.Mrs.Sujatha M.Sc.(N),

Principal ,

Matha college of Nursing,

Manamadurai.

7. Prof.Mrs.Kalaiselvi M.Sc. (N)

Vice Principal,

Matha College of Nursing,

Manamadurai.

8. Mrs.Asha M.Sc. (N),

Asso.Prof. in Medical Surgical Nursing,

Matha college of Nursing,

Manamadurai.

APPENDIX-IV

CERTIFICATE FROM EDITOR

TO WHOMSOEVER IT MAY CONCERN

I here certify that the editing work related to the dissertation entitled, **"A study to assess the effectiveness of back massage on reduction of pain and anxiety among patients with stroke in selected hospitals Madurai."** By **Mr.Vinothkumar.P**, II year M.Sc Nursing student of Matha College of Nursing, Manamadurai was done by me.

Date : 17-07-2018

Place : Manamadurai

Signature of the Editor

APPENDIX-V (A)

Part-A

DEMOGRAPHIC VARIABLES

AGE : BELOW 40YRS/ 41-60 YRS/ABOVE 61 YRS

SEX : MALE/ FEMALE

EDUCATION : UNEDUCATED/ PRIMARY / SECONDARY /UNDERGRADUATE/ POST GRADUATE

OCCUPATION : MODERATE/ SEDENTARY/HEAVY

INCOME : BELOEW RS.1000 /RS. 1001-5000 / ABOVE RS. 5001

DURATION OF ILLNESS : BELOW 2YRS /2-5 YRS/ ABOVE 5 YRS

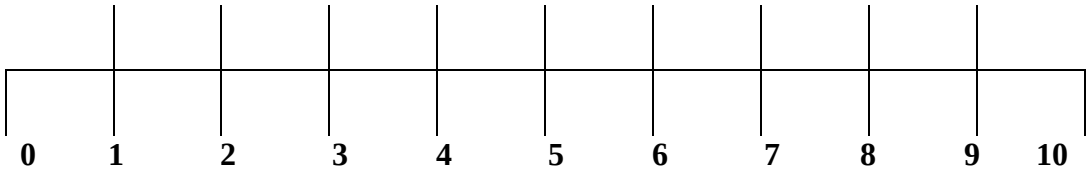
TYPE OF FAMILY : NUCLEAR/JOINT

FAMILY HISTORY OF STROKE : YES/ NO

PREVIOUS HOSPITILIZATION : YES/ NO

PART-B

NUMERICAL PAIN SCALE



0 : NO PAIN

1-3 : MILD PAIN

4-7 : MODERATE PAIN

8-10 : SEVERE PAIN

PART - C

MODIFIED ANXIETY RATING SCALE

S.NO	QUESTIONS	RARELY 1	SOME TIMES 2	MANY TIMES 3	OFTEN 4
1.	Do you feel more nervous and anxious than usual?				
2.	Are you feel afraid for no reason at all?				
3.	Do you get upset easily?				
4.	Do you feel that you are unable to relax?				
5.	Do you think everything is all right nothing bad will happen?				
6.	Do you have the fear of loosing control?				
7.	Are you bothered by head aches, neck and shoulder pain?				
8.	Do you feel faint while you are standing?				
9.	Do you have fear of worst happening?				
10.*	Do you feel steady and comfortable?				
11.	Do you feel that your heart is beating faster?				
12.	Do you feel in secured?				
13.	Do you have the feeling of dizzy or lightheadedness?				
14.	Are you have the fear of dying?				

15.*	Do you fall asleep easily?				
16.	Do you have difficulty in breathing?				
17.*	Are you able to take food without choking?				
18.	Are you bothered by stomach ache or indigestion?				
19.	Do you have a feeling to empty your bladder often?				
20.*	Are your hands usually dry and warm?				
21.	Do you feel your face getting hot and flushed?				
22.	Do you have the feeling of numbness or tingling sensation in the extremities?				
23.	Are you scared about the present condition?				
24.	Do you have night mares?				
25.*	Do you get a good night's rest?				

The anxiety rating scale- questionnaire test has 25 questions. Each question is scored on a scale of 1-4.There are fourteen questions (1, 2, 3, 4, 6, 7, 8, 9, 11, 12, 13, 14, 16, 18, 19, 21, 22, 23, 24) worded towards increased anxiety level and six questions (5, 10, 15, 17, 20, 25) worded towards decreased anxiety levels.

The scores ranged from

Below 60 - Mild level of anxiety

61-84 - Moderate level of anxiety

85-100 - Severe level of anxiety

APPENDIX –V (B)

பதட்ட நிலை கண்டறிதல் கேள்விகள்

வ. எண்	கேள்விகள்	எப்பொழுதாவது	சில வேளைகளில்	பல வேளைகளில்	அடிக்கடி
1.	எப்பொழுதும் போல் இல்லாமல் அதிகமாக பதட்டப்படுவதாக உணர்கிறீர்களா?				
2.	நீங்கள் காரணமில்லாமல் பயப்படுவதாக உணர்கிறீர்களா?				
3.	நீங்கள் எளிதில் மனஉளைச்சலுக்கு உள்ளாகிறீர்களா?				
4.	உங்களால் எளிதாக மனத்தளர்வாக முடியவில்லை என்று நினைக்கிறீர்களா?				
5.	எல்லா நிகழ்வுகளும் சரியாக இருக்கிறதென்றும் தீமை ஒன்றும் நேரிடாதென்றும் நினைக்கிறீர்களா?				
6.	நீங்கள் உங்களது கட்டுப்பாட்டை இழந்து விடுவோமோ என்று பயப்படுகிறீர்களா?				
7.	தலை, முதுகு மற்றும் கழுத்து வலி போன்றவற்றை பொருட்படுத்திகிறீர்களா?				
8.	நீங்கள் நிற்கும்போது மயக்கமடைவதாக உணர்கிறீர்களா?				
9.	தவறுதலாக எதுவும் நடந்துவிடுமோ என்று பயப்படுகிறீர்களா?				
10.	நீங்கள் நிதானமாகவும், சவுகரியமாகவும் இருப்பதாக உணர்கிறீர்களா?				
11.	உங்கள் இதயத்துடிப்பு வேகமாக இருப்பதாக உணர்கிறீர்களா?				

12.	நீங்கள் பாதுகாப்பின்றி இருப்பதாக உணர்கிறீர்களா?				
13.	தலைச்சுற்றுவது தலை வலிப்பது போன்ற உணர்வுகள் உங்களுக்கு ஏற்படுகிறதா?				
14.	உங்களுக்கு மரணபயம் இருக்கிறதா?				
15.	படுத்தவுடன் எளிதில் உறங்கிவிடுகிறீர்களா?				
16.	உங்களுக்கு மூச்சுவிடுவதில் சிரமம் இருக்கிறதா?				
17.	புரை ஏறாமல் உங்களால் உணவு உட்கொள்ள முடிகிறதா?				
18.	வயிற்றுவலி மற்றும் செரிமான கோளாறுகளை பொருட்படுத்துகிறீர்களா?				
19.	உங்களுக்கு அடிக்கடி சிறுநீர் கழிக்கத் தோன்றுகிறதா?				
20.	பொதுவாக உங்கள் கைகள் வெதுவெதுப்பாகவும், ஈரப்பதமாகவும் இருக்கிறதா?				
21.	உங்கள் முகம் சிவப்பாகவும், வெதுவெதுப்பாகவும் மாறுவதாக உணர்கிறீர்களா?				
22.	உங்களது கை, கால்களில் மதமதப்பு மற்றும் ஊசி குத்துவது போன்ற உணர்வு ஏற்படுகிறதா?				
23.	உங்களது தற்போதைய நிலைமையைக் குறித்து பயப்படுகிறீர்களா?				
24.	உங்களுக்கு இரவில் கெட்ட கனவுகள் வருகிறதா?				
25.	நீங்கள் இரவு நேரத்தில் நன்றாக ஓய்வு பெறுகிறீர்களா?				